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THE UNIVERSITY OF ALBERTA

THE PROCESS OF ADJUSTMENT FOLLOWING MYOCARDIAL INFARCTION

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by

JOY LOUISE JOHNSON

A THESIS SUBMITTED TO THE FACULTY OF GRADUATE
STUDIES AND RESEARCH IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF NURSING

FACULTY OF NURSING

EDMONTON, ALBERTA

FALL 1988

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled THE PROCESS OF ADJUSTMENT FOLLOWING MYOCARDIAL INFARCTION submitted by JOY LOUISE JOHNSON in partial fulfillment of the requirements for the degree of MASTER OF NURSING.

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Date: September 7th 1988

To my parents, my mother Lois who encouraged me to nurse and who provided me with an understanding of what nursing can and should be and my father Donald, who has demonstrated throughout his life a concern for others and a zest for knowledge and understanding.

ABSTRACT

The purpose of this study was to examine the process of adjustment that individuals experience following myocardial infarction (MI). The study was conducted utilizing a grounded theory approach. Interviews with 14 individuals who had experienced an MI were the major source of data. The findings of this study indicate that the process of adjustment following MI is variable and incorporates four stages. In each of these stages the individual focuses on the core process of regaining a sense of personal control. The informants' descriptions indicated that this sense of control consists of three dimensions: a sense of predictability, of self-determination, and of independence. The completion of the adjustment process is contingent upon the full realization of these three dimensions. The first stage of the adjustment process involves attempts to defend oneself against a threatened loss of control. In the second stage, the individual struggles to come to terms with her or his MI. The second and third stages of the adjustment process were found to be highly related, in that the ways an individual deals with the second stage affects the manner in which the third stage, learning to live, is experienced. Throughout the third stage numerous strategies are employed in order to re-establish a sense of control. If control is re-established the individual progresses to the final stage of adjustment. The hallmarks of this final stage include an acceptance of limitations, a refocusing on issues other than the MI, and a perceived sense of mastery. Men's and women's experiences with the process of adjustment post-MI were found to differ. Women tended to resume activities at a faster pace following their MIs and were more reluctant than men to engage in life-style modifications. A description of the process of adjustment that includes the experiences of women has not been previously reported. Further investigation is required to verify the theoretical model developed in this study and to develop and test interventions

which will assist the victims of MI in the adjustment process. The findings of this study provide a basis for investigations of this nature.

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I. INTRODUCTION

Statement of the Problem

In industrialized countries the incidence of Coronary Artery Disease (CAD) exceeds that of any other life threatening disease (Hirsch & Meagher, 1984). CAD represents an insidious process that begins early in life and progresses steadily throughout the years. Frequently, CAD is manifested as myocardial infarction (MI). The treatment and care of the patient with MI has dramatically changed over the past decade. The improved control of vital functions and the intensification of care during the acute phase of MI has reduced mortality during hospitalization to 15% (Johansson, Vedin, & Wilhelmsson, 1983). Despite this progress, care for the MI patient continues to pose several problems. This is particularly true if one considers the MI patient's recovery in broader terms than the recovery of the cardiovascular system.

With the increase in survival rates, attention has turned to the rehabilitation of patients with MI. Despite the substantial volume of research literature in this area the process of adjustment which patients experience following MI is not understood. To date, investigators have focused on specific aspects of rehabilitation such as the incidence of anxiety and depression and the frequency with which individuals return to work. The importance of patients' own perceptions of their recoveries following MI has not been acknowledged in the literature. Consequently, research findings in the field of cardiac rehabilitation offer a fragmented understanding of the process of adjustment which MI patients experience.

The majority of research studies in the field of cardiac rehabilitation have focused on the male patient. There has been a failure to acknowledge that the female experience following MI may be different from the male experience. The focus on the male MI patient inevitably has arisen from the fact that men under 65 years of age have three to five times the incidence of MI compared to women (Johansson et al., 1983; Weinblatt, Shapiro, &

Frank, 1973). Nevertheless, more than 10,000 Canadian women died of MI in 1981 (Statistics Canada, 1982). Moreover, some investigators project that the incidence of MI in women will escalate over the next decade as more and more women expose themselves to stressors outside the home and as the incidence of cigarette smoking in young women increases (Boogard, 1984; Hirsch & Meagher, 1984; Otten, 1985).

Men and women differ both physically and in terms of their socialized gender roles. They are exposed to different stressors and react differently to them (Bowles & Dam-Rabolt, 1986). It is therefore erroneous to generalize findings derived from research which has focused on men following MI to the female population.

Investigators are continuing to explore ways in which cardiac rehabilitation programs can be improved. Yet despite the tremendous research effort in this field, findings indicate that not all the needs of male and female cardiac patients are being met. Nurses have a major role to play in the development and implementation of cardiac rehabilitation programs. Prior to the development of effective interventions, which meet the needs of MI patients, an understanding of the process of adjustment which both women and men experience following MI must be attained.

Purpose and Rationale

Nurses play an important role in assisting survivors of MI achieve optimal health. Yet, little is known regarding the process of adjustment which men and women experience following MI. Prior to the establishment of effective cardiac rehabilitation programs for both men and women, the context in which they live their lives and the activities they engage in while rehabilitating must be understood.

The purpose of this study was to increase nursing knowledge regarding the process of adjustment which men and women experience following MI. The findings of this study provide a base of understanding from which health professionals can conduct further research. Research in the field of cardiac rehabilitation cannot progress to a higher level of inquiry without an understanding of what individuals experience following MI.

Ultimately, further research in this field will lead to a sufficient understanding of the experiences and health needs of MI victims.

Objectives

The specific objectives of the study were to:

1. Generate a detailed description of the process of adjustment following MI.
2. Compare and contrast the process of adjustment which men and women experience following MI.
3. Generate a theoretical analysis of the factors which influence the adjustment process following MI.
4. Develop propositional statements regarding the process of adjustment which men and women experience following MI.

II. REVIEW OF THE LITERATURE

Individuals who have experienced an MI have been the subject of numerous investigations. Despite this tremendous research effort, a clear understanding of the process of recovery which an individual experiences following MI has not emerged. The bulk of the research in the field of cardiac rehabilitation has focused on aspects of recovery. The result of these investigations is a fragmented understanding of how an individual adjusts following MI. The majority of these investigations have utilized traditional quantitative research approaches. This orientation tends to reduce the human being under study to an object composed of many small measurable units. It gives no clue as to how to fit these small units back into the dynamic whole that is the living human being (Hammersley & Atkinson, 1983). The purpose of the following chapter is to summarize and critically assess the existing literature which pertains to the adjustment of men and women following MI and to demonstrate the need for further investigation in this area.

The differentiation between male and female responses to MI is a confusing issue. This confusion stems from the fact that investigators frequently have referred to the cardiac patient with male specific pronouns, despite the fact that women may have been included in the study sample. Although this choice of wording is a traditional style of writing, it can be misleading. Despite this style of writing there are two assumptions that frequently underlie research in the field of cardiac rehabilitation: (a) most cardiac patients are male, therefore investigation should be confined to this sample, or (b) the experiences of men and women following MI are identical. The first assumption is erroneous and the second has not been substantiated. In fact, the few studies that have examined gender differences refute this assumption. These issues must be considered when examining the research literature which pertains to rehabilitation following MI.

The majority of literature which addresses the rehabilitation of the MI patient consists of papers which focus on the treatment and care of MI patients. These papers generally fail to include any empirical data or detailed clinical descriptions. A reading of these papers leaves one with the impression that statements are more emphatic and confident than is currently justified by the available research literature. For this reason the following review will primarily focus on pertinent research literature drawn from the disciplines of nursing, medicine, and the behavioural sciences. The major findings from these disciplines will be discussed in terms of three content areas: (a) psycho-social adjustment following MI, (b) physical adjustment following MI, and (c) familial adjustment following MI. These three categories have emerged as the primary foci of investigation in the existing cardiac rehabilitation literature. Finally, a fourth area will be addressed which includes the small body of research that has focused on the perceptions of individuals who have experienced an MI. Included in this section will be a discussion of extant biographical and autobiographical literature which describes the experiences of MI victims.

Psycho-social Adjustment Following MI

It has been widely recognized that the event of MI can have a profound effect on the psychological status of the individual (Byrne, 1982; Cassem & Hackett, 1977; Cay, Vetter, Phillip, & Duggard, 1972; Wishnie, Hackett, & Cassem, 1971). In turn, an individual's psychological status can affect his or her course of recovery following MI. Several investigators concluded that anxious and depressed cardiac patients tend to have prolonged and complicated illnesses (Croog, Levine, & Lurie, 1968; Garrity & Klien, 1975; Gentry & Williams, 1979; Hertanu, Davis, Focseneanu, & Lahman, 1986). Denial, anxiety, anger, and depression have been frequently cited as typical responses to the event of MI (Nagle, Gangola, & Picton-Robinson, 1971; Runions, 1985; Scalzi, 1973). Although considered "normal" adaptive mechanisms on a short term basis, these responses are considered maladaptive if prolonged or accentuated. Such responses are reported to occur in a variety of patients; no differentiation has been made on the basis of gender, nor has the context in which these responses occur been described in any detail.

Several investigators have examined the factors that can contribute to psychological distress post-infarction. Some investigators have attempted to link the presence of psychological distress with aspects of the coronary care unit (CCU) environment. Doerhman (1977) reviewed this body of literature and concluded that little evidence existed which supported the claim that provocative circumstances, such as attachment to a monitor or witnessing a cardiac arrest, bring about psychological disturbances. In fact, it has been reported that the environment of the CCU is a source of security for the individual who has experienced an MI (Cay et al., 1972). Gentry and Haney (1975) found that older MI patients are less optimistic about their future than younger patients and that concerns about the possibility of death are related to the patient's perceived degree of illness and subjective anxiety. It has also been suggested that individuals of low socio-economic status and of certain cultural backgrounds experience higher morbidity and mortality rates post-MI (Ell & Haywood,1985; Kottke, Young, & McCall, 1980). Often, American individuals of low economic status have expressed concern about the expense of medical care and the loss of wages. This in turn contributes to the anxiety they experience post-MI (Kottke et al., 1980). One must be cognizant of the fact that financial responsibility for medical care, which is an integral part of the American health care system, may contribute to this finding. Conclusions about the source of psychological distress that individuals experience must be considered tentative. The majority of studies in this field have not clearly indicated the basis on which investigators have made judgements regarding the cause or severity of emotional distress.

Little effort has been directed toward considering the social factors which influence the experience of the hospitalized MI patient. Cay et al. (1972) reported that at discharge 42% of MI patients anticipated social problems when they returned home, with one third of the problems expected to be of a serious nature. The substantive problem areas were related to employment, family or marriage, and finances. Croog et al. (1968) found that less educated male MI patients frequently reported a lack of discussion with their physician about the effects of their illness upon future employment and physical exertion. As feelings and opinions of hospitalized patients might greatly influence subsequent behaviours, more attention to these issues is necessary.

Cassem and Hackett (1977) developed a model to explain the course of "normal" emotional reactions experienced by an individual following MI. They postulated that a patient experiences heightened anxiety during the first two days following MI and shortly thereafter becomes depressed for a period of two to three days. Reacting to the seriousness of "his" illness the patient reportedly becomes difficult to "manage." Cassem and Hackett, both psychiatrists, based the development of their model on their experiences with psychiatric referrals in a CCU. There have been some attempts made to empirically verify this model; the results however are inconclusive. Gentry, Foster, and Haney (1972) concluded that anxiety, initially at a high level, declines within five or six days following MI. No study, to date, has demonstrated a significant degree of depression while patients are in the CCU (Doerhman, 1977). It has been suggested that deniers, defined as those who do not acknowledge that they have had an MI, are more likely to resist following medical advice (Croog, Shapiro, & Levine, 1971). Based on an analysis of 19 interviews, Thomas et al. (1983) argued that Cassem and Hackett's model was no longer applicable, as patients of the 1980s are more familiar with the concept of the CCU, more confident in medical procedures, and, therefore, are less likely to deny their illness. These investigators argued that anxiety was the emotional response most frequently seen in present day CCUs, specifically, "mutilation anxiety."

An implicit assumption of the Hackett and Cassem (1977) model is that the MI patient, by denying the fear if not the reality of his or her MI, avoids the anxiety and depression associated with acceptance. Denial has received special attention as a commonly used coping mechanism in patients with MI. Some investigators have claimed that denial is ubiquitous among acute MI patients (Hackett, Cassem, & Wishnie, 1968). However, empirical evidence for the claim that denial is, in fact, beneficial for the MI patient is conflicting (Havik & Maeland, 1986; Thomas et al., 1983). Stern, Pascale, and Ackerman (1977) found that most MI patients could be categorized into two groups: depressives and deniers. These investigators reported that 70% of those patients who were depressed post-infarction remained so throughout the first year following their MI. Depressives reportedly failed to remain at work and/or to function sexually and experienced higher hospital readmission rates, whereas the deniers generally functioned well. However, results of other investigations are inconsistent with these findings. Shaw, Cohen, Doyle, and Palesky (1985) found no difference in outcome for patients with high and low levels of denial, whereas Bartle and Bishop (1974) and Soloff (1978) both found that chronic post-acute deniers experienced higher morbidity and mortality rates. The findings of Levine et al. (1987) further confuse this picture, as they found that denial of illness was an adaptive mechanism when used during hospital recovery, but was maladaptive when utilized on a long term basis.

While there are reports which question the apparent ubiquity and protective function of denial, the inter-study discrepancies seem largely due to inconsistent and ambiguous definitions of denial. Sobel (1969) found denial to be an overestimated myth maintained by medical staff to avoid confrontation with the intensely disturbing feelings of the MI patient. Further clarification regarding the functions and effects of denial might be obtained by considering the patient's perspective.

More extreme reactions to the experience of MI have been reported, such as altered states of consciousness, psychotic episodes, and delirium. There has been controversy concerning the etiology of such states, with metabolic imbalances, medication effects, cardiogenic hypoxia, and intensive care unit environments all being suspected (Razin, 1982).

There is a fairly substantial body of literature which focuses on programs of treatment for the psychological distress of MI patients. This literature is based primarily on the clinical experiences of health care professionals. Accordingly, their work is rich in breadth and depth, but totally lacking in systematic study. From this body of literature, a series of prescriptive guidelines have emerged. First, intervention must be early. Many authors (Cassem & Hackett, 1973; Granger, 1974; Nagle et al., 1971) have stressed the preventability of much of the psychological distress which patients experience. Second, intervention must be systematic, graduated, and educative (Garrity, 1973a, 1973b). Third, social supports must be involved and mobilized (Wishnie et al., 1971). Finally, continuity and follow-up are essential (Kaufmann, Pasacreta, Cheney, & Arcuni, 1986; Logan, 1984; Stern, T. A., 1985). These guidelines are extremely general and, in many ways, obvious. No specific suggestions or recommendations exist regarding how to effectively recognize and deal with problems of psychological readjustment, or how to define those areas in which help is most valuable (Naismith, Robinson, Shaw, & MacIntyre, 1979; Perkins, Oldenburg, & Andrews, 1986). Several studies of individual psychotherapeutic intervention, which vary widely in method and rigor, suggest modest psychologic and, perhaps, physiologic gains as a result of supportive (versus exploratory) intervention (Razin, 1982).

Although investigators have generated an impressive list of behavioural responses to MI, they have failed to explain why these responses occur and the meanings they may hold for individuals. Doerhman (1977) made the observation that there is a greater emphasis on the psychological distress which the MI patient experiences in clinical papers than in research reports and that the measurement of this distress has, apparently, alluded researchers thus far. Investigators have failed to utilize the patient as a source of insight. Inevitably, individuals have insights about their behaviours. Yet the patient has, to date, been ignored as a source of valuable information. An understanding of the patient's perceptions of the experience of having an MI could contribute significantly to an understanding of the distress she or he experiences.

Few investigators have specifically addressed the emotional responses of women following MI. Boogard's (1984) study is noteworthy in that it represents the first documented attempt to specifically examine the differences between men and women following MI. Boogard found women to be more socially isolated and to experience more guilt than men. Other investigators, who have surveyed the prevalence of psychological difficulties experienced by MI patients, have also noted differences between women and men. Following MI women are reported to experience a higher incidence of depression (Cay et al., 1972; Stern, Pascale, & Ackerman, 1977; Stern, Pascale, & McLoone, 1976), more difficulties adjusting (Granger, 1974), and higher morbidity and mortality rates than men (Byrne, Whyte, & Butler, 1981; Byrne, Whyte, & Lance, 1979). However, these investigations are fraught with potential sources of invalidity which include: (a) the utilization of unsubstantiated assumptions to guide data collection and analysis, (b) the utilization of gender biased instruments to measure psycho-social variables (McBride, 1987), and (c) lack of evidence that the instruments utilized were tested for reliability and validity. As a result of these limitations one must conclude that the psychological responses which individuals experience following MI are not well understood.

Mumford, Schlesinger, and Glass (1982) reviewed the literature concerning psychological interventions for recovering MI patients. They constructed a strong case for the need to recognize the emotional and psychological needs of MI patients and to develop appropriate interventions. However, effective interventions for men and women cannot be planned until a true understanding of their experiences has been attained. Clearly, more research must be conducted before the psychological adjustment of individuals following MI can be fully understood.

Physical Adjustment Following MI

Over the past 15 years, the early mobilization of patients following MI has become part of the accepted mode of therapy. Early activity progression has been described as having both physiological and psychological benefits for the MI patient (Alteri, 1984; Crawshaw, 1974; Fletcher, G. F., 1984; Naughton, 1985; Stern & Cleary, 1982; Stern, Gorman, & Kaslow, 1983). Consequently, physical reconditioning has emerged as the major focus of cardiac rehabilitation programs. Investigators have pointed to numerous factors which influence the patient's desire and ability to engage in physical activity; these include: the presence of physical symptoms (Hentinen, 1986; Mayou, McMahon, Sleight, & Florencio, 1981), psychological sequelae (Cay et al., 1972; Stern, Pascale, & McLoone, 1976), and the absence of social support (Garrity, 1973a; Holm, Fink, Christman, Reitz, & Ashley, 1985).

Over the past decade return to work has been utilized as the main index of successful cardiac rehabilitation. It has been postulated that one of the most stressful periods for the recovering MI patient is approximately four months following hospital discharge when, no longer sick and yet not completely recovered, the patient begins the difficult process of returning to work (Doerhman, 1977). It has been reported that as many as 50% of patients fail to return to work following MI (Kjoller, 1976; Nagle et al., 1971). Cardiac damage and psychological and social factors have been cited as equally common causes of "invalidism" (Stewart & Gregor, 1984; Wishnie et al., 1971). Cay et al. (1973) concluded that cardiac patients who were emotionally distraught were more likely to consider any physical symptoms as sufficiently severe to stop them from working. However, the process by which an individual assesses her or his symptoms in this manner remains unclear. Why do certain MI patients assess their symptoms to be insurmountable? Can this assessment change over time? The process by which an individual chooses to not return to work remains unclear.

The utilization of return to work as the main index of rehabilitation is problematic for two reasons. First, it represents a goal that may not necessarily be held by the patient and thereby ignores the patient's satisfaction with his or her quality of life. Second, it fails to recognize the fact that many individuals who experience an MI are not employed outside the home. To date, there has been a failure on the part of investigators to recognize household responsibilities as work. Despite some changes in women's roles over the past decade, women remain primarily responsible for housekeeping and childrearing. Many women, who return home following an MI, are returning to their place of work. Yet, an understanding of what this prompt return to the "work setting" means for women has not been fully explored.

One group of investigators reported that women have lower expectations than men regarding their adherence to their medical regimens and that women's adherence behaviours post-MI are closely related to their spouses' expectations (McMahon, Miller, Wikoff, Garrett, & Ringel, 1986; Miller, Wikoff, McMahon, Garrett, & Ringel, 1985). In contrasting male and female patients' physical activities following MI, Boogard (1984) noted several differences in the type and intensity of their activities. She reported that at one week following hospital discharge, the men were "resting" and "relaxing," whereas the women had begun light housework. Two to three weeks later, the women reported they had increased their activity level by increasing the type of household tasks performed, while the men reported they were engaging in walking programs. Clearly, the physical activities engaged in by women following MI differ from those of men. These differences must be well understood if cardiac rehabilitation programs, which meet both men's and women's needs, are to be developed.

Considering that few investigators have examined the patient's perspective it is interesting to note that compliance to cardiac rehabilitation programs has surfaced as a problem which many investigators have attempted to address (Ba[illegible] & Waltz, 1984; Bille, 1977; Blumenthal, Williams, Wallace, Williams, & Needles, 1982; Horgan, Teo, Murren, O'Riordan, & Gallagher, 1980; Kinnaird, Yoham, & Kieval, 1982; Miller et al., 1985; Niccoli & Brammell, 1976; Pinneo, 1984). The reasons identified for noncompliance include a lack of social reinforcement and an unwillingness to take the time to participate in exercise programs. Investigators continue to ask the question, "Why are patients noncompliant in cardiac rehabilitation programs?" Yet, to date, the patient's perspective of the cardiac rehabilitation experience has been largely ignored. It seems imperative that professionals, working in the field of cardiac rehabilitation, learn about and attempt to enhance the adjustment skills which individuals possess, rather than imposing rehabilitation programs which are perceived to meet the MI patient's needs.

Mickus (1986) recommended that nurses should teach patients about the expected pace of activity resumption following MI. Yet, this cannot be effectively taught to patients if nurses have little understanding regarding the adjustments that patients face once they return home. Realistic goals for rehabilitation cannot be established without a true understanding of the MI patient's experience. Until this understanding is gained, a goal such as "return to work" will remain the health care professional's goal, not necessarily the patient's. If nurses are to develop therapeutic interventions, specific to men and women, descriptive studies are needed upon which practice can be based. To ignore this pressing need is to ignore the needs of men and women following MI.

Familial Adjustment Following MI

The role of familial and spousal support is viewed as vital to the promotion of full rehabilitation for the MI patient (Badura & Waltz, 1984; Segev & Schlesinger, 1981). Often, the relationship between a husband and a wife becomes strained following MI (Marsland & Logan, 1984; Tyzenhouse, 1973). It has been reported that as many as 50% of marriages deteriorate following MI (Runions, 1985; Wishnie et al., 1971). In an attempt to account for this deterioration, investigators have identified many possible contributing factors; these include: (a) spouses demonstrating overly anxious or overly protective behaviour (Fournet & Schaubhut, 1986), (b) spouses becoming critical of their partners' behaviour (Wilson-Barnett, 1979), and (c) relationship strain resulting from sudden changes in roles and role functions (Gaglione, 1984). One factor that contributes to all of the above possible causes of relationship strain is a couple's minimal level of understanding of the medical information and advice they receive (Wilson-Barnett, 1979). Both patients and their spouses must contend with role changes and alterations in self-concept. Although the patient's physiologic status sets limits on his or her potential level of recovery, the amount of support a patient receives can be critical (Dracup, Meleis, Baker, & Edelfsen, 1984). Medin and Breljie (1983) found that under the right conditions, couples may experience a positive turn in their marital relationship amid the general upheaval surrounding the MI of a spouse. They suggested that two necessary conditions must be present in order for this to occur: (a) a strong marital relationship, and (b) adequate support during the period of crisis and recovery.

Conflicts between patients and family members reportedly focus upon the patient's diet, medication, and physical activity (Bilodeau & Hackett, 1971; Rahe, Ward, & Hayes, 1979; Tyzenhouse, 1973). Typically, patients resent the overprotectiveness and concern shown them by their spouses and families (Mayou, Foster, & Williamson, 1978b). Husbands and wives, feeling guilty about their spouse's MI and fearing reoccurrence (Mayou, Foster, et al., 1978b), become solicitous, in some cases overly so, in order to avoid arguments and unpleasant situations (Nyamathi, 1987). Hentinen (1983), in an investigation of spousal relationships post-infarction, found that in order for wives to provide support, they must be provided with relevant information regarding rehabilitation following MI.

Familial responses to MI have been studied in the male population of MI victims (Bramwell, 1986; Bramwell & Whall, 1986; Hilbert, 1985; Taylor, Bandura, Ewart, Miller, & Debusk, 1985). However, these investigations have not been replicated with a sample of male spouses of female MI patients. With the exception of one investigation, there is an absence of research which examines how the patient views his or her reintegration into the family. Boogaard (1984) found that there are differences in the ways male and female patients adjust to their families following MI. When questioned, both men and women reported that their families perceived them as being ill during their rehabilitation and treated them accordingly. However, most male patients reported that their family members "waited on" them during rehabilitation, whereas women resisted being helped. Women, with family supports, refused help related to their "typical" household responsibilities (preparing meals, house cleaning, etc.). Boogard was the first investigator, in the field of cardiac rehabilitation, to recognize that male and female differences may exist and examined the patient's perceptions of family adjustment. Once again, there are strong indications that more research is needed if an understanding of how men and women respond to their families is to be attained.

The intimate relationship between a couple can also be affected by MI. Often, each partner harbours fears regarding the resumption of sexual activity (Davidson, 1979; Scalzi, 1982). Green (1975) indicated that the most common misconceptions of coronary patients include beliefs that: (a) even mild exertion can kill, (b) sexual intercourse should not be resumed, and (c) repeat infarctions tend to occur at the time of orgasm. It has been reported that as many as 15 to 60% of couples fail to resume sexual activity or experience decreased sexual satisfaction following MI (Cooper, 1985; Hellerstein & Friedman, 1970; Horgan & Craig, 1978). Women have generally not been included in studies which have investigated the resumption of sexual activity following MI. One group of investigators who studied the resumption of sexual activity in 130 women found that 71% did not resume, or decreased, their levels of sexual activity (Papadopoulos, Beaumont, Shelley, & Larrimore, 1983). One reason cited for decreased sexual activity or satisfaction in men and women is lack of information regarding the realities of sexual activity following MI (Mehta & Krop, 1979; Okoniewski, 1979; Scalzi & Dracup, 1979). As cardiac disease occurs at a later age in women, some health care providers assume that they are no longer interested in sexual activity (Baggs & Karch, 1987). It is assumptions, such as this one, that pervade the research concerning women and MI. There is a dire need for research which breaks away from such biases and examines MI from the patient's perspective. Prior to the development of suitable interventions, an understanding of the difficulties and adjustments that men and women face following MI must be established.

Lack of information and misunderstanding about expectations constantly surface as problems which can affect family adjustment following MI. The inadequacies of existing rehabilitation programs are reiterated in much of the literature. Wilson-Barnett (1979) argued that prescriptions regarding the cessation of smoking and dieting are not effective, and that physical training programs are not geared to "real life" situations. The result of these ineffective programs is often increased anxiety for both the patient and his or her spouse. Clearly, if rehabilitation programs are to assist patients and their families, an understanding of what the "real life" situation consists of must first be understood.

The MI Patient's Experience

It has been suggested that the context within which the patient suffers an MI mediates responses to it (Burgess & Hartman, 1986; Byrne, 1982). This belief is shared by Doerhman (1977) who concluded that the ability of the patient to adjust following MI might be related to the patient's view of his or her life. There has been some suggestion in the research literature that patients' perceptions of their health may be more important than the actual clinical severity of their MIs in determining morale and return to work (Garrity, 1973a, 1973b; Meagher, 1987; Monteiro, 1973). These perceptions bear little relationship to severity (Nagle et al., 1971) and patients respond adversely to unintended, nonverbal, or symbolic meaning of physicians' communications (Mayou, Foster, et al., 1978a). One group of investigators found that the degree of uncertainty an individual experiences following an MI influences her or his response to the diagnosis of MI and its treatment (Christman et al., 1988).

Cowie (1976), Ford (1987), and Levy (1981) investigated the MI patient's responses to the experience of an MI utilizing inductive approaches. Cowie found that patients assumed their MIs were not sudden and unanticipated events, but were something which could be seen to have causal antecedents. When an individual discovered a number of these antecedent factors in his or her biography, the MI was made intelligible. Cowie also described a process of "typifying" the MI. Individuals practiced the process of typifying by sharing experiences with other patients. Cowie's investigation provided some insight regarding how the MI patient perceives and makes sense of his or her MI. Unfortunately, this investigation is limited to the initial days in hospital. Furthermore, Cowie did not address whether differences exist in the ways that men and women perceive their MIs.

Using phenomenological approaches, Ford (1987) investigated the experience of living with a history of MI and Levy (1981) investigated the experience of undergoing an MI. Both of these investigations were limited to male samples. Ford described the ways in which the MI affected four dimensions of being: self, other, time, and space. These dimensions are affected in the following ways. First, an MI interrupts a man's engagement in the world. As the individual strives to re-establish his health, he becomes attentive to his body and learns to deal with it in a mechanic-like fashion. Second, the individual struggles for control. Not wanting to be different, he attempts to establish a sense of oneness with others. Third, the experience of an MI profoundly affects an individual's sense of goals and priorities. Finally, the MI patient must struggle to regain a sense of control over his interactions with his environment. Ford's research revealed aspects of the experience of adjusting to an MI that to date have not been considered. However, this investigation did not provide an understanding of how, over time, an individual progresses through the adjustment process.

Levy (1981) found that individuals who have experienced an MI attempt to fit their biographies into their lives in order to make sense of their MIs. For example, he described how victims of MI would search for possible causes of the MI in their life histories. Both Levy and Cowie (1976) found that some individuals were unable to complete this process. However, as both of these investigators limited their studies to the initial days post-infarction, it is unclear if individuals who experience this difficulty are later able to come to terms with their MIs.

Three biographies provide some additional insight into what it is like to experience an MI and adjust following. *A Coronary Event*, written by Stephen Lesher (1978) who experienced an MI, tells a story of how difficult it is to adjust post-MI. Cousins' (1983) book, *The Healing Heart,* is an autobiographical account of the author's attempt to take an active role in his care following an MI. Finally, *Heartsounds* by Martha Lear (1980) is an account of the author's reaction to her husband's MI. This biographical literature provides some insight into what it is like to have an MI. In the acute stage it dominates the individual's life. It affects how the individual feels, thinks, and acts. The individual is acutely aware of his body. He suffers from anxiety, depression, and loss of control. He is concerned about the future. While these accounts provide some insights into the experience of having and recovering from an MI, they do not provide a systematic account of the ways in which different individuals adjust. The researcher must go beyond the description, which biography provides, and describe the patterns of adjustment. In so doing, the researcher brings the analysis to a higher level of abstraction and in this way can contribute to theory development.

Summary

As more lives are saved following MI, critical questions regarding the rehabilitation and adjustment following MI have come to the forefront of clinical practice and research. The past two decades have witnessed the development of a variety of rehabilitation programs. Various strategies and techniques have been developed and utilized in these programs including educational strategies (Fletcher, V., 1987; Gerard & Peterson, 1984; Horlick, Cameron, Firor, Bhalerao, & Baltzan, 1984; Raleigh & Odtohan, 1987), counselling techniques (Baker & McCoy, 1979; McKnight Nicklin, 1986; Oldenburg, Perkins, & Andrews, 1985; Rahe, Ward, & Hayes, 1979; Stern, T. A., 1985), and exercise therapy (Roman et al., 1983; Zohman, Young, & Kattus, 1983). Despite the utilization of a vast number of resources, health care professionals are continuing to be faced with the fact that existing programs offer questionable benefits for the MI patient (Burgess, Lerner et al., 1987; Sivarajan et al., 1983; Steele & Ruzicki, 1987; Wallace & Wallace, 1977).

It seems particularly important at this time that the process of adjustment following MI be examined from the patient's perspective. It is evident from the review of the literature that little is known regarding the adjustment process which men and women experience following MI. The research which has been conducted in the field has been plagued by both conceptual and methodological problems. Furthermore, although the studies cited in this literature review provide valuable information regarding aspects of the adjustment process, they represent a fragmented body of knowledge. Individual investigations have, to date, tended to examine isolated relationships between select patient responses and outcomes, rather than examine the entire adjustment process. Finally, there are strong indications that the experiences of men and women following MI differ. Yet, these differences have not been fully explored.

Bar-On (1986) aptly described the current situation of treatment of the MI patient as a "Tower of Babel" in which each group of health professionals utilizes a different model to assess and treat the patient. This situation is further confused as the patient inevitably holds yet another perspective. If nurses are to assist the MI patient it is essential that the profession develop an understanding of the process of recovery which men and women experience following MI. Prior to the development of sound interventions for this population, an understanding of their experiences must be acquired.

III. METHODS

The purpose of this study was to examine the adjustment process which women and men experience following MI. Research in practice disciplines should ultimately produce theory for professional purpose (Dickoff & James, 1968). However, research that isolates theory and describes relationships between phenomena must be completed prior to the development of prescriptive theory. Studies that focus on the first level of theory development are "descriptive in nature and occur at the exploratory or formulative stage of theory development" (Field & Morse, 1985, p. 9). As the experiences of men and women following MI have not, to date, been comprehensively and systematically investigated, a research design suitable for a first level research question was selected (Diers, 1979). In the following chapter the method selected for this investigation will be explicated. Included in this chapter is a discussion of qualitative methods, the utilization of a grounded theory approach, data collection and analysis, issues of reliability and validity, and finally ethical considerations.

Qualitative Methods

The method used in this study was qualitative. A qualitative approach is a mode of inquiry which is "concerned with understanding human beings and the nature of their transactions with themselves and with their surroundings" (Benoliel, 1984, p. 3). The utilization of a qualitative approach provided a means by which the entire context of adjustment which men and women experience following MI could be investigated. The contextual grounding of human nature is vital to an understanding of human behaviour (Mishler, 1979). The objective of qualitative research is to discover the emic perspective, that is, the real experience of the situation from the informant's point of view. Theory that is developed by utilizing qualitative methods is inherently relevant to the world from which it arises, whereas the relevance of research that utilizes deductive approaches varies widely.

The research concerned with the adjustment of individuals following MI has, to date, utilized deductive methods of inquiry, thereby ignoring the context in which individuals who have experienced an MI live their lives. This has resulted in a fragmented understanding of their adjustment. The utilization of a qualitative method, which included an inductive approach, enabled the investigator to gain a fresh perspective in an area that has been strongly influenced by researcher bias and restricted outlooks (Chenitz & Swanson, 1986). It has been argued that nursing's perspective is focused on the wholeness or health of human beings in interaction with their environment (Donaldson & Crowley, 1986). In order to evaluate and expand holistic nursing practice, the nursing profession must conduct research and generate theory. The utilization of a qualitative approach will contribute to the development of a complete understanding of the process of adjustment following MI. A qualitative method was selected, therefore, as it was well suited to the research objectives identified as well as to the professional discipline out of which these objectives arose.

Grounded Theory

A grounded theory approach (Glaser, 1978; Glaser & Strauss, 1967) was utilized to collect and analyze the data as it is a qualitative method which is particularly suited to the examination of processes, rather than static situations. Grounded theory refers to data which are grounded in fact and the subsequent generation of theory from that data. It involves both inductive and deductive approaches to theory construction (Stern, 1980). By way of comparative analysis, constructs and concepts that emerge from the data are tested as they emerge (Simms, 1981). The utilization of such a method allows for the flexibility that is required in an exploratory study. Accordingly, grounded theory offered a rigorous, systematic means for developing an understanding of the process of adjustment following MI.

The generation of grounded theory is guided by the presupposition that individuals order and make sense of their environment, although their world may appear disordered or nonsensical to observers. Grounded theorists base their research on the presupposition that certain groups of individuals share a specific social psychological problem that is not necessarily articulated. This fundamental problem is resolved by means of a social psychological process (Glaser, 1978). This investigation focused on a group of individuals who had experienced MIs. The utilization of a grounded theory approach enabled the investigator to gain an understanding of how these individuals adjusted and the processes they experienced in order to achieve their adjustment. The result of this investigation is a theory which describes the adjustment process and accounts for the behavioural variation that was evident among the informants.

Data Collection.

The generation of grounded theory relies on the inquiring, analytic mind of the researcher. Rather than following a series of linear steps, the investigator works within a matrix in which several research processes operate simultaneously (Swanson-Kauffman, 1986). Unstructured, in-depth, face-to-face interviews were utilized to collect the data. This method of data collection was beneficial for three reasons: (a) it allowed the informants an opportunity to share their experiences with the investigator, (b) the relaxed style of the interview permitted the investigator to become acquainted with the informants as individuals and to understand them and their points of view, and (c) it provided the investigator with an opportunity to clarify concepts and pursue particular topics of interest.

As the data analysis progressed, the nature of the interviews changed. The questions posed by the investigator became more specific. The development of the questions was guided by the emerging analytic categories and linkages. As Hutchinson (1986) stated, "One engages in a constant dialogue with the data in order to establish direction for further sampling" (p. 124). Utilizing this method, questions in the subsequent interviews were utilized to confirm or disprove various relationships among the data and to substantiate existing relationships which had emerged.

Interviews were conducted with a total of 14 informants who had experienced an MI. The sample consisted of two groups: primary informants, who had experienced an MI within the previous three months, and secondary informants, who had experienced an MI within the previous four years. Informants were selected from two sites. The primary sample consisted of individuals who were enrolled in a cardiac rehabilitation program. The secondary sample was selected from members of a cardiac self-help group. Seven of the informants were female. Prior to the commencement of the first interview, biographical information was obtained from the informants (see Table 1). The informants were asked to tell the investigator about their experiences with their "heart attacks." Subsequent questions were based on the information that the informant shared with the investigator.

In addition to the interviews, the investigator maintained detailed field notes regarding the setting of the interview and characteristics of the informants. Data from the field notes were included in the data analysis. All of the interviews were audio-recorded and subsequently transcribed. All of the interviews, with the exception of one, were conducted in the informants' homes and each interview lasted approximately 60 minutes. A total of one to three interviews were conducted with each informant. The number of interviews conducted with each informant depended on the receptivity of the informants, the amount of information they were able to share, and the contribution they were able to make to the emerging theory. A total of 26 interviews were conducted in this investigation.

Data Analysis.

The grounded theory method requires that the investigator simultaneously collect and analyze the data. As stated previously, rather than follow a linear sequence of analysis, the investigator works within a matrix. This matrix is composed of three steps: coding, linking categories, and identifying the core category. The investigator moves back and forth between data collection and these three steps until the categories are integrated into a substantive theory. In so doing, the investigator moves progressively from the concrete to the abstract. Throughout the analytic process the existing literature is selectively reviewed.

Table 1 *Biographical Characteristics of the Informants*

Informants	Characteristics				
	Age *	Sex	Marital Status*	No. of Months Post-MI**	Employment Status*
1	57	F	M	1	P
2	72	F	M	2	R
3	66	F	M	3	N
4	55	M	M	3	P
5	43	M	M	10	P
6	59	M	M	42	P
7	59	F	D	45	P
8	63	F	M	3	N
9	46	M	M	26	P
10	57	M	M	2	P
11	56	M	M	3	P
12	68	F	M	3	R
13	64	M	M	3	P
14	55	F	M	2	P

Note. N=Never employed outside the home; P=Paid employment; R=Retired
* At time of MI
** At the time of the first interview

The purpose of this review is to verify and elaborate the categories and to learn more about related subjects as they arise.

The initial coding utilized in this investigation involved the identification of open, substantive codes. Each example or each theme, which the informants mentioned in the interviews was coded. An attempt was made to utilize as many codes as possible in the initial stages of coding in order to ensure "full theoretical coverage" (Hutchinson, 1986, p. 120). All of the data were coded in this manner and the codes were written on the margins of the interview transcriptions. Next, the codes were condensed and sorted into categories. Categories are abstractions of phenomena observed in the data (Glaser, 1978). Each identified category subsumed many of the initial codes. In this investigation three major categories were initially identified, including: making the MI real, facing limitations, and learning to cope. As data within each of these categories were compared and contrasted, new categories emerged. The emerging categories were then compared to each other in order to ensure that they were mutually exclusive. Throughout this process, additional information was sought in order to further substantiate the categories.

As categories emerged, an attempt was made to explore and establish linkages. These linkages provided conceptual order for the emerging categories. The creation, testing, revising, and modifying of linkages continued until all of the categories were placed into a conceptual framework.

Through a process of repeated analysis of the data, a core category was identified. The core category is the process which pulls all the identified categories together and explains most of the variation in the data. In other words, the core category explicates "what is going on in the data" (Glaser, 1978, p. 94).

Throughout the process of data analysis, the investigator utilized the strategies of "memoing" and "diagramming." Memos are the researcher's written records of the analytic process. They provide the researcher with a means of accounting for developing hypotheses and comparing and verifying findings as the investigation proceeds. The use of memos includes both inductive and deductive analytic processes. "One conceptualizes (inductive) when coding and memoing and then assesses (deductive) how the concepts fit together" (Hutchinson, 1986, p.123). This repetitive examination of the data ensures that the emerging theory is complete. Diagramming, like memoing, is a strategy that enables the researcher to obtain an overview of the categories and linkages as they emerge. Diagrams are the visual representation of the analytic scheme. The utilization of diagramming allows the researcher to examine the emerging theory as a whole.

The final stage of analysis involves a refinement of the conceptual diagrams and validation of the developing theory. Validation of the theory was sought through a final re-examination of the data by questioning the primary informants and by consulting the secondary informants.

Reliability and Validity

The value of scientific research is partially dependent on the ability of the researcher to demonstrate the credibility of his or her findings (LeCompte & Goetz, 1982). The primary objective of the qualitative researcher is to accurately conceptualize and describe the lived experience of the informants. As Smith and Pohland (1976) stated, "Really knowing not only means having it conceptualized, but also being able to describe its day to day working as well as, if not better than, the man *[sic]* who is actually living and working in the setting" (p. 269). In order to achieve this objective the investigator must ensure that threats to the reliability and validity of the findings are minimized. As the methods and aims of qualitative research are substantially different from quantitative research, the criteria for assessing the reliability and validity of qualitative investigations differ (Sandelowski, 1986). In the following section the strategies that the investigator employed in order to enhance the reliability and validity of the findings will be addressed.

In all research, the utilization of appropriate sampling procedures is central to the establishment of reliable and valid findings. In this investigation the objective of the data collection was to obtain data that were comprehensive, relevant, and detailed (Morse, 1986). In order to achieve this objective a non-probability sample was utilized. The assumption that underlies the utilization of non-probability sampling is "that all actors in a setting are not equally informed about the knowledge sought by the investigator" (Morse, 1986, p. 183). Purposive or theoretical sampling is a form of non-probability sampling in which all informants are deliberately selected by the investigator according to the direction and theoretical needs of the study. It is the most preferable method of obtaining a non-probability sample as it ensures the selection of informants who will meet the theoretical needs of the investigation (Morse, 1986). Theoretical sampling is based on the need to collect more data, to examine categories and linkages, and to ensure that the evolving theory is representative of the phenomena being investigated. Using this method of sampling the full range of variation in each emerging category is sought in order to guide emerging theory development.

In qualitative research informants must be selected according to specific qualities. Informants must be knowledgeable about the topic being investigated, by virtue of their experience with specific events, and they must be able to share this knowledge (Morse, 1989). The primary informants in this investigation were selected with the assistance of the staff of a cardiac rehabilitation center. The staff reviewed various clients with the investigator, providing insights about their social backgrounds and resources. Based on the staff's knowledge of the clients, appropriate informants were selected. Initially, the staff tended to recommend those clients who were "coping well." They were reluctant to recommend individuals who were experiencing difficulty with the rehabilitation process. This "bias" was quickly identified by the researcher and was rectified by discussing the theoretical needs of the investigation with the staff. Following this discussion, the staff questioned the investigator about the type of informants required for the investigation, prior to making suggestions. With the assistance of the staff, a group of primary informants, who met the theoretical needs of the investigation, were selected.

The secondary informants were members of a cardiac self-help group. The investigator met with the group and explained the purpose of the investigation. Many of the members expressed a willingness to participate in the investigation. Information was collected about each potential informant and the investigator selected members of the self-help group according to the theoretical needs of the investigation.

The theoretical requirements of the investigation were determined by the ongoing analytic process. Hypotheses were generated about the process of adjustment and subsequently "tested." For example, a hypothesis was developed regarding the nature of life-style changes that the informants experienced as a result of their MIs. Whereas, the male informants tended to make life-style changes in conjunction with their wives, the female informants tended to make changes independently. Noting this difference, the researcher continued to sample in order to obtain an understanding of whether this hypothesis was, in fact, supported. In addition, the investigator attempted to determine under which circumstances this hypothesis might not be supported. Diversity in sampling ensured extensive data that covered a wide range of behaviours in varied situations. This "test-retest" procedure, which is an integral part of theoretical sampling, contributed significantly to the reliability of the emerging theory (Stern, P. N., 1985).

The comprehensiveness and relevance of the data were further ensured by the continuation of theoretical sampling until the theoretical codes were saturated. Saturation refers to the completeness of the data. When no new conceptual information is available to indicate new codes or the expansion of existing ones, the codes are said to be saturated. As Hutchinson (1986) stated, "A code is saturated if the researcher can answer, via the data, questions regarding the cause, context, consequences and so on of the particular code" (p. 124).

Four additional strategies were incorporated into this study in order to minimize threats to its validity. First, the information obtained from an informant was verified by asking others about the same content. This form of concurrent validation served to enhance the accuracy of the data collected. Second, frequent checks for representativeness of the data as a whole and of the coding categories were completed. Third, in order to correct for bias, or distortion, and to confirm the validity of the interpretations, data from secondary informants were used. Finally, the researcher obtained validation from the informants by presenting aspects of her findings to them and requesting their opinions.

Another factor, which can affect the reliability and validity of the findings, is the effect which the researcher imposes on the data collection and analysis. The ideal of obtaining data that are unaffected by the researcher is unachievable. All data, obtained by both qualitative and quantitative methods, include theoretical assumptions of some kind. The qualitative researcher must recognize that the assumptions he or she holds may be erroneous and hence must subject his or her assumptions to systematic inquiry. As Hammersley and Atkinson (1983) stated, "Rather than engaging in futile attempts to eliminate the effects of the researcher, we should set about understanding them" (p. 17). This investigator attempted to explicate and assess the biases and assumptions she held. This was accomplished by keeping a diary of her thoughts and concerns and by regularly reviewing these entries. Another valuable means of exploring biases, was through the repeated discussions the investigator held with other individuals. Through these discussions the author was able to discover unvalidated assumptions that were influencing the data collection and analysis and thus was able to identify inconsistencies in the developing theory. In turn, by recognizing these assumptions she was able to exploit them in the subsequent analysis by asking the informants about them and examining their foundations. Often, the assumptions the researcher made and the personal reactions she had to the data provided excellent "starting points" for further investigation and analysis. For example, the investigator found that at times she was reluctant to telephone the informants as she was fearful that something had happened to them. By examining this response the investigator gained insight regarding the uncertainty that MI victims and their families face. This insight was subsequently explored in further interviews.

Finally, the relationship that developed between the investigator and the informants must be addressed, as it is a factor which can also affect the process of data collection (Sandelowski, 1986). The investigator disclosed to the informants that she was a nurse who had some experience working in coronary care units and that she had no experience in cardiac rehabilitation. She informed them about the purpose of the study and emphasized that she was interested in their personal perspective. In the initial stages of the interviews, most of the informants tended to focus on the "medical" aspects of their "heart attacks." The investigator found that she had to reinforce that she was interested in their personal perspectives. Undoubtedly, the fact that the researcher is a nurse contributed to the informants' initial responses. However, over the course of the interviews the informants were better able to "open up" and share their perspectives. Many of the informants stated that they enjoyed the interviews and they believed that the opportunity to talk openly about their "heart attacks" had benefited them.

Many of the primary informants initially had difficulty discussing their MIs. Events which were "fresh" in their minds were difficult to talk about. However, over the course of the interviews they were able to share their stories. As time passed and they began to develop a sense of control and trust with the investigator, they were able to share information more freely. The secondary informants were less reticent to share their experiences. They had spent considerable time thinking and talking about their MIs. The combination of insights provided by these two groups of informants was invaluable.

Ethical Considerations

Several strategies were utilized to maintain the ethical standard of this investigation. First, ethical clearance was obtained from the ethical review committee of the Faculty of Nursing, University of Alberta and the host institution. Second, written informed consent was obtained from each of the informants (see Appendix). All of the informants were informed about the nature of the study. They were all informed that participation in the study was voluntary and that they could withdraw from the study at any time. Third, anonymity of the informants was maintained at all times. All identifying information within the texts of the transcriptions was deleted or altered. A code number was assigned to each informant. The names and phone numbers of the informants were known only to the investigator. To ensure the informants' anonymity their names and phone numbers were kept in a separate, locked file. At the conclusion of the project, lists that included the names and addresses of the informants were destroyed. Finally, the audio-recordings of the interviews will be destroyed following a period of five years. The transcriptions of the interviews will be kept, as the informants agreed to the utilization of these transcriptions in future analyses.

IV. FINDINGS: THE INITIAL STAGES OF THE ADJUSTMENT PROCESS

The findings that relate to the initial stages of the adjustment process following MI are presented in this chapter. First, the core category will be discussed. Following this discussion the four stages of the adjustment process, including the phases and strategies, will be explicated. The major findings and the similarities and differences among the informants will be illustrated with verbatim statements. In order to protect the anonymity of the informants, all identifying characteristics have been altered or removed.

The term myocardial infarction will not be utilized in this chapter as it was not a term the informants utilized. All of the informants referred to their conditions as "heart attacks." Although many were aware of the term "myocardial infarction," they did not feel comfortable using it. As one informant stated, "By the time you can figure out how to say myo-whatever you'd be half way cured."

Regaining Control

Glaser (1978) stated that the generation of grounded theory occurs around a core category which accounts for a major portion of the variation in observed behaviour. The core category, to which all other categories in this study relate, is regaining control. The process of adjustment following a heart attack begins with the onset of symptoms and involves a struggle to regain control. Control has been described in a variety of ways. In this investigation it was found that the core category, regaining control, is a complex process which involves three dimensions: regaining a sense of predictability, of independence, and of self-determination (see Figure 1).

A sense of predictability involves a perception that responses which are made will have some impact on life's outcomes. This perception is based on an individual's ability to utilize past experiences to foretell the immediate future. Predictability is an aspect of control which is often taken for granted. Not having to "think twice" before climbing a flight of stairs is an example of such predictability. An individual is normally able to engage in such a task, knowing that he or she will arrive at the top of the stairs; the outcome is reasonably certain. A heart attack imposes physical and psychological restrictions on a person's life. It introduces a sense of uncertainty which, in turn, diminishes predictability. The heart attack victim must regain a sense of predictability before a sense of personal control can be fully regained.

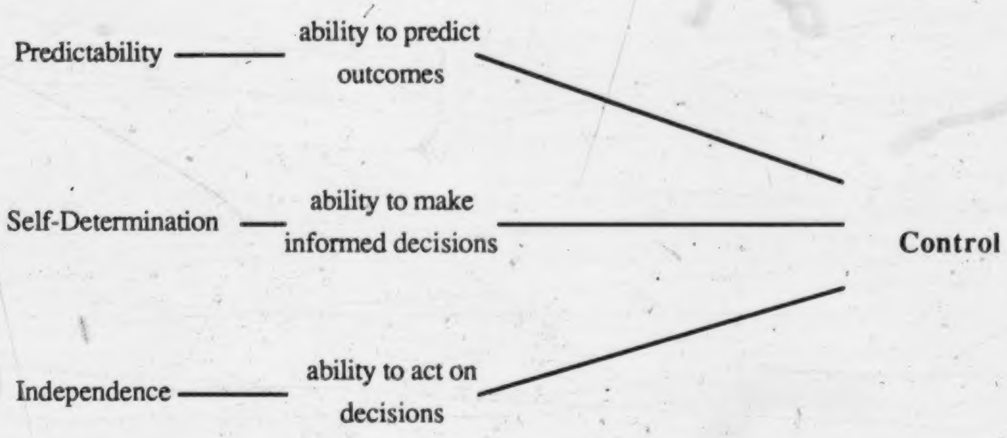
Predictability
ability to predict outcomes
Self-Determination
ability to make informed decisions
Independence
ability to act on decisions
Control

Figure 1. The Dimensions of Personal Control.

Self-determination is the second dimension of control which is affected by the experience of a heart attack. Self-determination involves decisional control; the power to understand what is happening and to make autonomous decisions. A heart attack is a frightening and unfamiliar event. Heart attack victims typically have little understanding of heart disease and its treatment. A lack of understanding of what is occurring to one's body undermines an individual's sense of power and control, and the victim must make sense of the heart attack before she or he is able to regain a sense of control. Similarly, one's independence is threatened by a heart attack. The ability to act on decisions is disrupted by limitations, both real and perceived. The victim is no longer able to trust her or his abilities and, therefore, must rely on others for support. As the heart attack victim regains a sense of independence he or she is able to regain a sense of control.

Clearly, a heart attack not only has implications for one's physiological well being, but has an impact upon every aspect of one's life. All of the informants in this investigation indicated that they believed the heart to be central to life and vitality. Consequently, the occurrence of a heart attack threatened their very beings; every aspect of the informants' lives was threatened by the event. As one informant stated:

> I: Your heart is central to your life. Your heart does the most...it seems if anything happens to your heart, it's like a big attack on you. I think that's why they call it a heart attack, instead of a heart problem.

The loss of control experienced as a result of the heart attack is often devastating and the struggle to regain control frustrating. The informants in this investigation described the heart attack in terms of a threat to their "whole" lives. They felt "fragmented" as a result of the heart attack and totally lacking control.

> I: It wasn't the right time. It could have waited until later when I was ready to say it could happen! I had my life figured out and I didn't want this stupid thing coming in there and telling me what to do...it popped into my life and it had no business being there because I hadn't willed it!

> I: I don't know what to do. I do not like to be adrift at the mercy of other people telling me what to do. I want to know what's going on. I want to play a role in what's going on.

The process of adjustment was not completed until the informants were able to regain a sense of control. However, some informants were forced to abandon the struggle.

The process of adjustment following a heart attack is lengthy. In this investigation it was found that the duration can extend from six months to two years. Unlike transient conditions, a heart attack leaves the victim with permanent heart damage. An individual cannot fully recover following a heart attack; at best, she or he will be able to compensate and adjust. The heart attack will not be forgotten. The ability to unconsciously rely on the heart will never be present to the extent that it was prior to the heart attack.

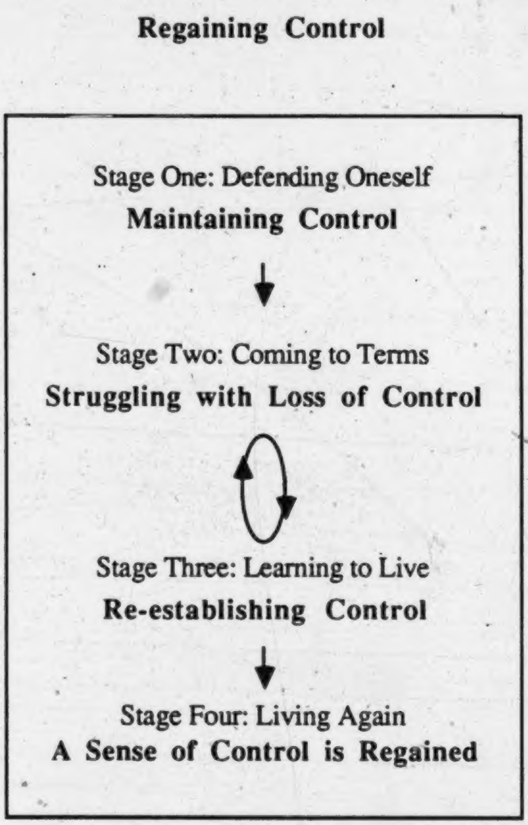
Regaining Control
Stage One: Defending Oneself
Maintaining Control
Stage Two: Coming to Terms
Struggling with Loss of Control
Stage Three: Learning to Live
Re-establishing Control
Stage Four: Living Again
A Sense of Control is Regained

Figure 2. The Process of Regaining Control.

The struggle to regain control following a heart attack is comprised of four interrelated stages: defending one's self, coming to terms with the event, learning to live, and living again. The process of regaining control persists throughout these four stages (see Figure 2). In the first stage, the heart attack victim fights to maintain control over her or his life. During the second stage, the heart attack victim struggles with a perceived loss of control. In the next stage, the heart attack victim begins the struggle to re-establish a sense of control over his or her life. Finally, if the victim is able to meet the challenge of regaining control, a sense of personal control is acquired.

In the following sections the four stages of the adjustment process will be presented and the strategies and responses, which are characteristic of each stage, will be delineated. Where applicable, the core category, *regaining control*, will be utilized to discuss the variations in the data.

Stage One: Defending Oneself

Heart attacks occur suddenly and with little warning. The individual, not having previously experienced a heart attack, is often confused by the presenting symptoms. Despite the severity of the initial symptoms, every attempt is made to not "give in" to the symptoms in order to maintain a sense of control. In the first stage of adjustment, the individual struggles to defend him or herself against the threatened loss of control. Three strategies are utilized in this first stage of adjustment, including the normalizing of symptoms, struggling to maintain the *status quo*, and finally, a distancing of oneself.

Normalizing Symptoms

All of the informants were asked by the researcher to "share their stories," beginning at whichever point in time they wished. All of the informants began the discussion of their experiences with a description of their initial symptoms. The nature and severity of the initial symptoms varied from informant to informant. However, in every case, past events and experiences were used to make sense of the initial symptoms. This involved a cognitive process of relating the presenting symptoms to previous experiences with health problems. The informants refused to consider their symptoms extraordinary. Rather, attempts were made to normalize the symptoms they experienced. Decisions regarding the course of action to follow were, consequently, based on this attempted normalization of the symptoms.

> I: I started to feel sick and I thought, "You know, there's a lot of flu going around. I wonder if this is the flu." So, I went and lay down.
>
> I: My opinion was that I've got a chest cold. I didn't believe that I was having a heart attack. My opinion was that I've got a chest cold and that was the problem....So, I got up to take some cough syrup.
>
> I: I've never had an experience with a heart attack, so I thought it was just a pulled chest muscle. So, I stood up and inhaled and I held my breath and this kind of relieved it. When I let my breath out it went back to being painful again.

Attempts to normalize and treat the symptoms persisted for up to three days following their onset. If their initial conclusions about symptom etiology were disproved, informants frequently continued to seek other causal explanations. For example, one informant, who initially determined that his "heart burn" was due to stress, later decided that he had the flu. This decision was made when his symptoms changed and he began to experience chills and nausea. The speed with which the initial symptoms escalated influenced the ability of the informant to continue to normalize the symptoms.

Other factors which influenced the persistent attempts to normalize the symptoms included preconceived ideas about heart attack symptomatology and etiology. In particular, three of the women in this investigation persisted in their attempts to normalize their symptoms because of a belief that women are not susceptible to heart attacks. In one situation, this belief was reportedly held by an informant's husband. The informant believed that something serious was happening to her. She was concerned and turned to her husband for support. Her husband assured her that there was nothing wrong. According to the informant, her husband did not believe that women could have heart attacks.

Informants who had preconceived ideas regarding the "typical" symptoms of a heart attack often prolonged their attempts to normalize their symptoms. For example, some informants believed that the hallmark of a heart attack is excruciating chest pain. Symptoms such as nausea, chills, weakness, and excessive perspiration presented a confusing picture to these individuals. Although they suspected that something serious was happening to them, they quickly dismissed the possibility of a heart attack as they believed that their symptoms did not match the "typical" heart attack symptoms.

> I: Well, not having had a heart attack, no one knows anything. You hear this and that and it's not always true. It's amazing the things you don't know. Like, when I was kneeling in front of the toilet there, throwing up my guts, all I could think of was: "I must have caught the flu" or "I've got food poisoning." Like, I had no idea that was one of the signs of a heart attack. And, I was never out of breath, you know. I had heard you get really short of breath. It never happened!

> I: I always thought with a heart attack that you get this pain in your left arm. I thought it couldn't be a heart attack, that pain wasn't there. So, I think that was the classic thing that threw me.

Other informants continued their attempts to normalize their symptoms because they believed that nothing terrible could possibly happen to them. They tended to describe their initial symptoms as "no big deal." This attitude persisted, despite the presence of serious symptoms. When asked why he persisted in this belief, one informant stated, "Everybody thinks these things happen to someone else, not me. Same old attitude, it won't ever get me." Attempting to normalize their symptoms provided these individuals with a mechanism to maintain a sense of control.

Struggling to Maintain the Status Quo

As attempts to alleviate the symptoms of "colds," "flu," "food poisoning," and "muscle pulls" fail, the individual begins to consider the possibility that something out of the ordinary may be happening to him or her. However, rather than seek assistance, he or she attempts to suppress this belief. To admit that something serious is happening is to admit that one is not in control. By seeking assistance, the individual fears that his or her worst fears may be confirmed. At this point, the individual begins to struggle to maintain the *status quo*.

> I: I only had a slight idea what might be happening, but I thought the standard, "Hey, it can't be me." So, I got up and threw up once. I was getting weaker all the time. But, I stayed at work for the day.

Rather than seek assistance, the informants tended to make every attempt to ignore the possibility that something serious might be happening to them and attempts to "carry on as usual" were made. Endeavoring to maintain the *status quo* allowed these individuals to maintain a sense of control. However, this struggle was extremely difficult as the informants had to contend with several factors, including their own sense that something ominous was occurring and pressure from others to seek assistance. These factors created a feeling of tension in the informants, which they had to fight to overcome. Many of the informants described their efforts to persuade others that they were all right. These efforts often persisted, despite a feeling that they were not "all right."

> I: [Fred] came in and said, "What's the matter with you? You look terrible. What's wrong?" And I said, "I don't feel very good." He said, "Why don't you get yourself over to the hospital?" And I said, "Just leave me alone. I'm going to finish work and then I'm going home."
>
> I: She kept on saying, "Mom, let's go to the hospital...you don't look good." She just thought there was something wrong with me and I kept on saying, "Oh, it's all gone, I'm fine."

In retrospect, many of the informants recognized that to face the fact that they required help was to recognize that the situation was beyond their own control.

In addition to managing the pressure which was exerted by others to seek assistance, the informants had to contend with their own sense that "something" was happening.

> I: I usually have a bottle of beer after work. [However], it didn't taste good. That's very strange, it always tastes good after putting in your nine hours....When I get home I usually do a crossword to get my tenseness out and I didn't feel like that either.
>
> I: I thought, "Gee, should I stop for lunch or shouldn't I?...I didn't have any breakfast today, maybe I'm feeling a bit hungry." So, I made myself a half a sandwich. I normally make a whole sandwich and I thought, "I wonder why."

Despite attempts to maintain the *status quo*, the informants were faced with a perception that something was not right. These perceptions were unsettling, as they required the informants to recognize that something out of the ordinary was occurring.

Two factors prompted the informants to seek assistance: an exacerbation of their symptoms and the repeated urging of friends and family to seek assistance. The exacerbation of symptoms was often accompanied by a sense of impending doom. This, in turn, forced the individual to surrender the struggle to maintain the *status quo*. The symptoms were magnified to such a degree that they could no longer be normalized. What was initially believed to be "normal" was subsequently viewed as "extraordinary." At this point, the informants believed they had lost the capacity to fight; they realized that assistance was required.

> I: I started throwing up and I threw up really badly. In fact, I was down on my knees in the can, and then I thought, "I can't do this anymore." So, I flopped out on the floor and I couldn't move. I just called my husband. I said, "I'm really sick!"...So, he called the ambulance.

The decision to seek help was difficult to make. Many of the informants felt caught between a desire to maintain control and the belief that they required assistance. However, as their symptoms continued to exacerbate attempts to normalize and maintain the *status quo* became impossible. The increasing sense of uneasiness and the severity of the symptoms were difficult to ignore. The informants desperately attempted to ease their minds. In one situation, an informant attempted to "relieve his mind" by looking for a bookmark which had the signs and symptoms of heart attack printed on it. He believed that the bookmark would provide proof that he was all right. He enlisted his family members to help him and, with their assistance, spent a half an hour searching for the bookmark. The bookmark was eventually found, but failed to rid him of his uneasiness.

> I: Well then, when I found...[the bookmark] I went through the symptoms and let's say there's five symptoms on it I could relate to myself: your chest pains, your arms going numb, you're nauseated, you're clammy. And I thought, "Well, if nothing else, we'll go up to the hospital...to relieve my mind."

The second factor which prompted the informants to seek assistance was the influence exerted by their family members and friends. As the result of repeated coaxing several informants agreed to seek assistance. In some cases, the trip to the hospital or physician was not made as a result of the individual believing that he or she required assistance. Rather, he or she chose to seek assistance in order to "ease the minds" of significant others.

> I: We'll go to the hospital to relieve my mind and also to relieve my wife's and family's mind. 'Cause they wanted me to go and I kept saying, "No, there's nothing wrong. It will go away."

> I: And a third person told me that I was looking badly and why don't I go to the hospital. And, so I walked across. They wanted me to go to the hospital and so I said, "I'll walk across."

By choosing to seek assistance, for the sake of others, these individuals were able to maintain a sense of personal control.

Distancing Oneself

Once the decision to seek assistance was made, the informants were quick to act. Most of the informants in this study chose to visit emergency rooms, however, two informants visited their general practitioners. Once professional help was solicited, the informants began to ponder the severity of their situations. The sense of severity was often reinforced by the reactions of the health care professionals who assisted them. The actions and behaviours of the health care professionals provided strong indications that something was seriously wrong.

> I: So, I went to see the G. P. [General Practitioner]. The description I've given to people is, if you've ever seen a doctor's face cloud over and they give you the "you're going to die son look," that's what I got at that point.

> I: The girl at the admitting desk said, "What is your problem?" And I said, "Well, I have pains in my chest and my arm has sort of gone funny on me."...She immediately left to get a doctor. And, within a few seconds there's a doctor back and they're getting a stretcher.

At this point, the informants began to distance themselves from the events, symptoms, and, if possible, the reality that something had gone terribly wrong. Many reported that their recollections of the events which occurred during the initial days in the hospital were "foggy." Rather than remain engaged in the crisis, attempts were made to avoid the terrible reality of the symptoms and the hospital environment. This distancing provided the informants with some "space" away from the crisis. Through the process of distancing, the informants disengaged themselves from the ongoing events. This, in turn, allowed them the freedom to avoid feeling a loss of control. In addition, distancing oneself allowed the informants an opportunity to gather their resources prior to facing the reality of what had occurred. Distancing strategies continued until the informants were ready to come to terms with what had happened.

The ways in which the individuals in this investigation managed to distance themselves from the "real world" varied a great deal. One of the most common forms of distancing occurred within the first few days of hospitalization. The informants refused to believe that something terrible was happening to them. The result was a sense that they were not involved in the horror filled reality, but were removed from it. Many of the informants described the events in the emergency room and the intensive care unit as "far away" or "unreal." They were unable to keep track of time. Two informants described a sensation of living in "slow motion." Many described a sensation of not being present during the initial days or hours of hospitalization. Their bodies were present, yet they were not emotionally involved in the ongoing events. In retrospect, many of the informants believed that they were distanced in order to protect themselves.

> I: At one point, though, I thought I was visiting my mother and she was having the heart-attack, and she'd been dead two years. I guess I was just trying to put it on somebody else so I wouldn't have it.

The most extreme form of distancing was experienced by a woman, who was gravely ill.

> I: I can remember them working over me there and it was strange. Like it really hurt and that. And, then for awhile it just seemed like I was just sitting up there watching myself have a heart attack and it didn't bother me at all. I was just watching all these people running around working.

While others might describe this phenomenon as an "out of body experience," it can also be viewed as an extreme form of distancing. This woman was able to effectively remove herself from the pain of a heart attack. She believed that she had partially "willed" herself to remain distanced, as she was "overwhelmed" with the pain and the stress she was experiencing.

Once the symptoms were controlled and the diagnosis shared with the informant, the distancing continued. Rather than face what had happened and the uncertainty of the future, many individuals continued to distance themselves by refusing to believe that the heart attack happened or by denying the diagnosis.

> I: Afterwards, it didn't seem like I had a heart attack. It didn't seem real. I thought, "Somebody else had it." It was funny.
>
> I: And, it was kind of interesting. I thought about the fact that I had a heart attack and it seemed almost impossible. It was like my brain didn't want to accept it.

Other informants distanced themselves from the experience by doubting the veracity of the diagnosis. If one is able to maintain the belief that the diagnosis of a heart attack is an error, control can be maintained. As one informant stated:

> I: They told me I had a heart attack but they never really convinced me. It wasn't until a week later that I was really convinced.
>
> I: They said it took them a long time to stabilize me and get me into the intensive care....My kids were all coming in and sitting and I was saying, "What are you doing here? I'm not dying. There's nothing wrong with me."

Once the diagnosis of heart attack was made, the informants were all transferred to cardiac care units. Despite a denying of the diagnosis and distancing themselves from the events, the informants allowed their admission to the hospital. Many described themselves as "objects" or "automatons" who were cared for by others. Rather than taking active roles "things were done to...[them]." The hospital staff were perceived to encourage this distancing by instructing the patients to rest and stay calm. Cooperation was perceived to be an expectation. One informant described this state as "limbo," neither engaged in the hospital world nor in the security of day to day life. Another informant stated, "It's kind of funny. You're kind of in and out of it. You're kind of stupid, but you remember what you say and hear." For some of the informants, the distancing they described was inevitably aided by the administration of Morphine, a drug commonly given to heart attack victims.

The informants remained distanced from the reality of their diagnoses and the hospital environment for a period ranging from one to seven days. During this period, many actively attempted to "prove" that they were not seriously ill. This "proof" took the form of challenging the authority of the hospital staff and rules or denying or ignoring the severity of their illness. For example, some of the informants reported that they attempted to do tasks that were not permitted, such as emptying their basins of water following their baths. One informant reported "sneaking off" the ward and exploring the hospital. Humor was also used as a mechanism to distance the informants from the reality of their heart attacks. Many reported attempts to laugh and joke with family and friends.

> I: I saw that there was this little T.V. screen [cardiac monitor]. So, they're watching. They think they're going to get me excited and I'm going to drop dead or something. So, one day I looked up at it and as I'm twisting to look up I noticed it went all funny and then I twisted a little more and it went really funny....So, next time when...[my children] came, I started wiggling around and I said, "Hey, now watch that T.V."...The older one said, "You're going to kill yourself. You can't do that." I said, "Oh, yes I can. Watch this. Isn't it neat!" But, you gotta have some fun or else you'd drop dead in there.

Some informants attempted to "break the rules" which were imposed upon them in the hospital. For example, they attempted to get out of bed when they had been instructed to remain in bed. Others refused to comply with the wishes of the hospital staff by neglecting to inform the staff when their chest pain recurred. By refusing to take the hospital experience seriously, the informant was able to remain distanced from the responsibilities and concerns which were associated with a possibly life threatening illness. One informant likened this situation to a young child who believes, "If...[she] shuts...[her] eyes, the whole world will disappear."

Over time it becomes extremely difficult to remain distanced. Family members, staff and the presence of medical equipment provide constant reminders that the heart attack did indeed occur. The individual becomes ready to face the reality of what has happened. Some informants required irrevocable proof that the heart attack had occurred. Once this proof was provided, they began to come to terms with what had happened.

> I: I was never really convinced until the cardio nurse came in...[a week later]....I asked her, "How do you know it's a heart attack?" So she says, "This little blip tells me it's a heart attack." And, at that point then I feel that I accepted that it was a heart attack.

Stage Two: Coming to Terms

A heart attack can easily undermine one's sense of control over one's body and one's life in general. Prior to regaining a sense of control the individual struggles to come to terms with the event. Coming to terms involves an effort to understand the event; why it occurred, what impact it has had, and what significance it has for the future. By coming to terms with the heart attack, the individual is able to regain a sense of control over the event and her or his life. Although some aspects of control cannot be regained through this process, it does enhance the individual's sense of predictability.

There are four phases which an individual usually completes when coming to terms. First, the individual faces his or her mortality. Through this process he or she comes to some resolution regarding the experience of having survived a life threatening situation. Second, the individual makes sense out of what has occurred. To understand why the heart attack occurred gives the individual a sense of control over his or her destiny. Third, the individual faces the possible limitations which may be present as a result of the heart attack. They face their temporary loss of independence and grieve the losses which they have experienced, both real and imagined. In turn, the culmination of these three phases contributes to the manner in which the fourth phase is managed. In the fourth phase of coming to terms with the event, the individual attempts to develop an attitude toward the future. The attitude, which the heart attack victim develops toward the future, has a significant effect on the strategies that he or she will utilize in the subsequent stages of the adjustment process.

Facing One's Mortality

A heart attack is a potentially life threatening event. At the time of the heart attack, many individuals are faced with the possibility that they may not survive. Many of the individuals in this investigation had not contemplated the possibility of their death prior to the time of their heart attack. The ability to survive a life threatening event was considered a profound experience. This, in turn, affected the ways in which the informants envisioned their futures.

Initially, the thought of dying was extremely frightening for some.

> I: I think I was scared. I thought, "Well, a heart attack, maybe it's the end."

> I: Things go through your mind you know, "Have I got long to live, or will my life be that much shorter?" And yet, I look around and I think, "You know I've had a good life."

As the informants contemplated the possibility of death, they were often prompted to review their lives. They described two outcomes. First, some informants expressed a sense of being grateful for surviving. These individuals were generally optimistic about their futures. Other informants were less optimistic about the future. These individuals were unable to rid themselves of their preoccupation with death.

Many informants were "grateful" for being given a "second chance to live." They believed that having survived the heart attack was something to be thankful for.

> I: And on the fourth day somebody gave me a newspaper...and as I read the obituary notices I thought, "Oh my gosh, my name isn't there." And, I knew I'd made it and I sort of looked at the date and I thought, "This is the day I'd be buried." And, I felt very, very grateful.

This "second chance" allowed the informants the opportunity to cherish life. Many believed that they had not previously lived life to its fullest. They wanted to appreciate their families more and show them that they cared.

> I: I think life has taken on a different meaning in a lot of ways. Like, oh, even wanting to spend more time with my family, doing more for them, spending a little more time and doing things with them, taking them out and doing things with them.

However, this potent desire to live was often dampened by the reality of the hospital setting and the limitations which the heart attack imposed. The informants were unable to "live life to its fullest" as they were weak, hospitalized, and dependent on others for support. Those informants who were able to maintain the belief that they had indeed been given a second chance, despite the restrictions they encountered, were able to maintain a positive attitude toward the future.

For some informants, the threat of death was a profoundly negative experience. These individuals did not believe that the threat of death subsided with their symptoms. Rather than believe that they could make a "new start," they believed that they might die an early death. Survival was not perceived as a new beginning, but was considered tentative.

> I: I said to my kids, "Don't get excited. Maybe I'll get better. Maybe I'll drop dead in a month. Who knows? There's no guarantee."

For these individuals, their "brush with death" continued to be a frightening reminder of their mortality throughout the adjustment process. Accordingly, these informants tended to be more cautious and pessimistic throughout the subsequent stages of the recovery process. Until a sense of predictability, independence, and self-determination was regained, they remained doubtful about their futures.

The informants' beliefs regarding their mortality and futures were subject to change over time. As will be described in subsequent sections, the experiences that the informants had, throughout the adjustment process, affected the ways in which they "came to terms" with their heart attacks. The informants often returned to the process of facing their mortality if they experienced serious symptoms in the course of their recovery, or if they began to improve to a degree to which they did not initially expect.

Making Sense

Once the shock of the initial experience passes, the heart attack victim attempts to make sense of what has happened to him or her. Causal explanations of some kind were sought by each informant. These explanations provided the victims with a sense of control. Finding a "reason" for the heart attack enabled these individuals to make sense of what had happened. What was initially seen as unpredictable, was subsequently fit into the schemes of the individuals' lives.

> I: I spent a lot of time figuring out exactly what caused my heart attack. This was important because it allowed me to figure out exactly what could be

> done about it....I'm 43 years old. Having had a heart attack, I don't want to put myself in these kinds of situations anymore.

The identification of the cause of the heart attack also provided the individual with a sense that the problem was manageable. Many believed that knowing the "cause" provided the "key" to the cure. Those individuals who were unable to successfully determine the cause of their heart attacks had a great deal of difficulty knowing how to manage their rehabilitation.

In order to make sense of the experience, the informants reviewed their past histories in light of their present situations. Factors that were not considered important until the event of the heart attack, were carefully scrutinized. Aspects of their histories, such as previous eating habits, took on new meaning. Most informants adjusted their perceptions of the past in order to make sense of the present. The causal explanations that individuals identified were based on their life reviews.

> I: See, I looked at myself and I thought, "Well, I'm not overweight. I don't believe I have high blood pressure. There's no stress that I can think of in the home environment. So, it must be work related.

> I: The combination of the high cholesterol level and the stress probably prompted it. So, that's what I have to learn to avoid.

> I: I was not truly a candidate for a heart attack because I eat a good diet and my weight is okay. Stress is really what caused it. I mean, there was just nothing I could do about it. I mean, that stress was just there.

Some individuals had difficulty identifying the cause of their heart attack. Despite careful consideration they were unable to make sense of the heart attack. These individuals tended to ruminate about the cause of their heart attack until an explanation was found.

> I: I kept thinking about it for about the first month after I got home...just going over in my mind, "Why did this have to happen?" And, then I'd sit and ponder over it.

Rather than identify the cause of their heart attacks, some individuals could only identify reasons why they should not have had a heart attack. This, in turn, stalled the process of making sense of the experience. These individuals tended to view the heart attack as a threat which could not be explained. They later had difficulty making and committing themselves to any life-style changes, as they were unable to identify a relationship between their previous life-styles and the occurrence of their heart attacks. These individuals believed that they had done everything possible to ward off the threat of heart disease. They believed that they had somehow been betrayed.

> I: I felt mad because I did all the right things. I thought, "I walk up and down eight flights. I swam every day. I walk wherever I can." I'd been doing all the right things. I'd also been watching my diet like mad...I've always been interested in nutrition.

> I: I felt that I shouldn't have had the heart attack and yet I know it's hereditary in our family. But, I don't smoke...I've been eating pretty regular diets and I don't drink that much. I've been pretty active....I shouldn't get a heart attack. I'm too young. I don't smoke and I'm pretty healthy.

Heart disease was considered, by all of the informants, to be a disease of life-style. The process of seeking causal explanations was often associated with a sense of guilt. It was generally believed that heart attacks occur because individuals do "something wrong." Some informants went so far as to state that they *deserved* a heart attack because of the way they lived.

> I: It's the old story I guess....I've worked, I've put in long hours, lots of worry, frustration, lots of stress. I've worked for this heart attack and I got it. I mean it's mine. I've worked for this and I guess you could say I got what I deserved.

Many informants felt a sense of remorse as they reviewed their histories. Some expressed regret for the way they had lived their lives, while others expressed a wish that they could "redo" parts of their lives. As one informant stated, "Everyone goes through the things that you wish you could have done differently. The second time you'd do it differently, like the mistakes you've made."

The sense that the individual is personally responsible for his or her disease weighed heavily on many of the informants. Many stated that this burden was felt because of the nature of the disease. Coronary artery disease was clearly considered a disease which could be avoided. For this reason, it was seen as different from many other diseases.

> I: I don't know how a person can opt out of not taking responsibility. And more so for a heart attack than cancer. I wouldn't feel the same way if I had cancer. I would say, "Hey, why me?" Or, if I had been hit by a car I could say, "Why me?" But, I can't honestly say, "Why me ?" with a heart attack. I guess one could almost say I had it coming to me.

Some informants had been warned by friends and family members to change their lifestyles prior to their heart attacks. These warnings were clearly remembered by the informants and provided them with evidence of their responsibility. As one informant stated, "In a way, I consider I've brought part of this problem onto myself. I certainly had enough warnings from the family. It was certainly talked about and I didn't listen."

The process of making sense of the event was aided by health professionals who worked with these informants. The identification of risk factors is an integral part of the health history assessment. Many of the informants sensed that a "cause" was being sought by the health professionals. Often, the questions asked by health professionals gave the informants clues as to what might have caused their heart attacks. This was considered helpful by some individuals, as it provided them with a structure for examining causal explanations. However, some individuals found the scrutiny of the health professionals distressful.

> I: There is a lot of finger pointing. You go along with them. And you start to think, "Something I did must have been wrong." 'Cause you're told this immediately. They tell you, "Well, let's see what you did that was wrong. Why did you get a heart attack?"

Informants attempted to make sense of the heart attack for their own benefit, as well as for the benefit of others. The shock that family members and friends experienced, when they learned of the diagnosis, was often conveyed to the informants. Many informants believed that they needed to explain to others why the heart attack occurred. As stated earlier, many of the female informants believed that a heart attack is an illness that concerns only men. The exception to this rule was those who lived a life of "excess." Consequently, many of the female informants were fearful that others would believe they had done something "wrong." They felt ashamed of having had a heart attack. The insinuations that the informants felt from others were, at times, devastating.

> I: I've said that I could have thought of many things that could happen to me but I never, ever in my life gave thought to a heart attack, because I couldn't....My friends and my neighbours, I don't think there's one of them that hasn't said, "How come *you* got a heart attack?"

> I: You know, everybody thinks about it once, "How come you're having a heart attack? You're too young, you're too skinny, you don't eat fat, you don't eat salt!" It's like you had to have done something bad to have a heart attack.

Making sense of a heart attack can be difficult for some individuals because of its hidden nature. The heart attack is not a condition one can visualize. Once the pain had subsided, some informants were left with a feeling that it was all over. These individuals had difficulty believing that the heart attack was "real." As one informant stated, "I was alive. It didn't seem anything could happen to me after it was over." Although symptoms of fatigue and occasional pain persisted, they did not provide the informants with visible reminders of the heart attack.

> I: Now if I was laying there with an artery pumping blood, I'd be scared....That's a viable thing you can see. You know you've had the cookie then. But, with a heart attack the pain goes away after they give you [illegible] shot.

> I: If you got a broken leg, you got it in a cast. You can see that and that's a daily reminder. But here you are with a heart attack that you cannot see and you're looking at your body and thinking, "I'm okay, I look okay."

These individuals had difficulty believing that the heart attack could have a permanent effect. It was not until limitations were faced that they were able to understand that the heart attack had an impact on their lives. Once some limitations were faced, these informants returned to the task of making sense of the heart attack.

If difficulties were encountered in the months following the initial heart attack, the informants often returned to this strategy and tried to make sense of events. At times, causal explanations were disregarded because the informants found that the explanations they had developed were not credible. In these situations, these individuals returned to the strategy of attempting to make sense of the situation.

Facing Limitations

An essential aspect of coming to terms with one's heart attack is facing the resultant limitations. A heart attack can have a huge impact on an individual's life. Before coming to terms with the heart attack, one must consider the implications the heart attack holds for the future, the obstacles that might lie ahead, and the plans that must be altered. Many of the limitations that an individual initially considers will not actually exist in the future. Nevertheless, these perceived limitations have a strong impact on how the individual comes to terms with the heart attack. For example, if limitations are perceived to be insurmountable, the individual will have difficulty managing to regain a sense of control over his or her life.

The informants in this investigation were faced with limitations, which were imposed on them by the hospital staff from the moment they entered the hospital system. Most of their activities were restricted, including walking, shaving, eating, and visiting. These limitations served as strong reminders to the informants that they were not well.

> I: I realized they weren't letting me out of bed. I couldn't even swing my feet over to the side of the bed. I was on a liquid diet...and then they told me I had a really bad one. Oh well, I guess I did.

As the informants progressed, they were gradually allowed to increase their levels of activity. At this point, most informants experienced the physical limitations that were imposed on them as a result of the heart attack. While lying in bed, most of the informants were unaware of their inabilities. By the third or fourth day of hospitalization, most of the informants began to ambulate and they became aware of their physical limitations. Most described sensations of fatigue and weakness. Simple tasks, such as bathing and walking, proved exhausting.

> I: They told me a lot of things I couldn't do right away...and that kind of made me think, "Well gee, am I that sick?"...But the minute I tried doing something, then I realized they knew what they were talking about....The first time they walked me down the hall I was just exhausted and I thought, "Well gee, does a heart attack take that much out of you?"

Faced with devastating physical limitations many informants pondered what the future would hold for them. They feared that they would never regain their strength. As one informant stated, "I thought, 'Boy if this is the way you are going to be all your life, this is rotten.' And, that's when I started getting disappointed." By far, the greatest fear for these individuals was that they would remain permanently disabled. "Initially, I believed that I was going to be a semi-invalid for the rest of my life....I was pretty depressed."

Many of the informants feared that the limitations they faced would be permanent. A sense that an irrevocable change had occurred prompted many to grieve the loss of a life-style previously enjoyed. Many informants spent time considering all of the activities they would no longer be able to do. These considerations were based on their current inabilities, rather than on an understanding of how they might improve. One informant described lying in her hospital bed and contemplating how her life had changed. "I thought, 'Oh, will I have to quit my bowling and my golfing? Do I have to quit all of the things I enjoy? My life is going to get so boring!'"

Although all of the informants were told they would improve, many feared that they would experience permanent disability of some kind. In order to cope with these fears they engaged in "anticipatory worrying." Anticipatory worrying involved ruminating about the worst possible outcomes of the heart attack. Many informants believed that if one prepared for the worst, the future could be faced. For example, one informant decided that he would never be able to drive again because he believed he was unable to change a tire. The impact of the heart attack had this effect on many of the informants. These individuals never wanted to be caught unprepared again.

The informants reported that they worried for three days to two weeks about the limitations they would face. Most were able to grieve their potential losses and subsequently place their losses behind them. They recognized that they had to begin to make some adjustments. In order to make this transition, they constructed an understanding of the heart attack that would allow them to continue with the adjustment process, rather than continue to mourn their losses. They developed an attitude toward the future which, in turn, provided them with a sense of direction.

Looking to the Future

Having faced their mortality and the limitations that the heart attack imposed and having attempted to make sense out of what occurred, the informants believed that they were faced with two options. They could continue to ruminate about what happened to them or they could look to the future and attempt to make adjustments. The speed with which the informants attempted to look to the future varied. While some informants were able to move quickly on to this final phase of coming to terms with the event, others expressed a difficulty in resolving the feelings they had about their mortality or the limitations they faced. The ways in which the informants envisioned their futures were of great significance as it was this factor which had the greatest impact on the selection of subsequent strategies in the adjustment process.

One informant described an "attitude" as "the position you are going to take towards the attack." The majority of the informants believed that a "positive attitude" made the greatest contribution to the adjustment process. It was believed that if one was positive, "you could lick it, instead of it licking you." However, not every informant was initially able to develop a positive attitude. The attitudes that the informants initially displayed can be divided into two groups: those with a positive attitude and those with an attitude that one must "wait and see" what the future would hold (see Figure 3).

The informants indicated that a positive attitude involved a belief that they would improve; that they would be able to successfully adjust. In turn, this belief aided the informants in developing a sense of control. The future seemed manageable. The obstacles to adjustment were not insurmountable. Although many informants wanted to possess a positive attitude, many found that they had to spend time convincing themselves that they would recuperate.

> I: I think I'm looking forward to a good life you know? I'm sure everything is going to be good for me. I just have to look at things positively and think, "If I look after myself I'm going to have a good life. Maybe this was just a little warning. Maybe if I look after myself I'm going to have a good life with my grandchildren."

Positive Attitude	***"Wait and See"***
Confidence in recovery	Fear of being permanently disabled
"Knowing" the cause(s)	Inability to understand "why"
	Anger - "I did everything right"
"Gratefulness" for a second chance	Knowledge of why they "shouldn't have had a heart attack"
	Fear of the possibility of death
Possession of specific plans for rehabilitation.	Uncertainty regarding the future
	Reluctance to commit to plans
Perceptions that limitations are manageable	Perceptions that limitations are insurmountable

Figure 3. Factors Which Affect Attitudes Regarding the Future.

The ways in which an individual makes sense of the heart attack appears to have a significant impact on the attitudes they developed. For example, informants who were able to "pinpoint" the reason for their heart attacks developed specific ideas about how they could improve. They tended to view the heart attack as a "warning." They believed that if they rectified "the problem" they would live long and healthy lives.

> I: So, it's happened and I guess I have to resign myself that it is a warning and it was a very fortunate warning because within the next two weeks of my heart attack, two of our friends didn't have that second chance. It was one heart attack and they no longer exist type of thing. So in one way, I

> guess, I take it as a warning and I have to adapt to the fact that it is a warning and start to pace myself.

One informant stated that she was "grateful" for her heart attack as it forced her to make necessary changes in her life. These individuals were generally keen to make life-style changes. They enthusiastically incorporated the changes suggested to them by the health professionals, particularly if they believed that the changes would resolve the problems which they believed had caused their heart attacks. These individuals were less amenable to changes that, in their minds, had no bearing on "the problem."

Some of the individuals who were unable to pinpoint causes for their heart attacks were also able to develop positive attitudes. Many decided to adopt this attitude simply because they wanted to live. As one informant stated, "It's not time to roll over and play dead yet." Other informants simply refused to believe that life was over. For a few, this urge to live was sparked by the realization that they had been given a "second chance." By facing their mortality, they had developed a new appreciation for life. One informant described his heart attack as "the best thing that could have happened to [him]." When asked why, he stated that, "I'll be a better person for what has happened."

The informants who remained angry or depressed and unable to make sense of what happened had great difficulty considering the future. Although many of these individuals desired a positive outlook, they believed they had nothing about which to be positive. These individuals continued to view life as tentative. They doubted that they would improve. They were frightened of what the future held for them. These individuals stated that they had great difficulty deciding how they would deal with the future. As one woman stated, "I've just got to wait and see how good I'm going to get." Those individuals, who felt they had to "wait and see," were tentative about specific plans. As one informant stated, "If I knew what caused it, I wouldn't do it again. I just don't know what caused it, so I don't know how to fix it." These individuals believed that they could not be positive about the future until the uncertainties which they associated with their condition were resolved.

The ways in which the informants envisioned their futures changed throughout the course of their adjustment process. As improvements were experienced and uncertainty was dissipated, those informants who felt that life was tentative were able to anticipate the future with a greater sense of confidence. On the other hand, one informant who initially held a strong belief that she would improve faced many complications during the adjustment process. In the face of these difficulties, she was unable to maintain a positive attitude. She became cynical about her future. She was unwilling to make plans and she believed that nothing she did would help her to improve.

The way in which the heart attack victim envisions his or her future has a large bearing on the course of adjustment. Other factors which can influence the way in which an individual envisions his or her future will be described in the following chapter. As one informant stated, "You tend to follow the direction you are looking toward. If you feel bad, you won't do well. If you feel good, like you are going to get better, then you will."

V. FINDINGS: THE FINAL STAGES OF THE ADJUSTMENT PROCESS

In the following chapter the final two stages of the adjustment process will be explicated. The outcome of stage two, *coming to terms,* has a significant impact on the strategies an individual utilizes in the third and fourth stages of the adjustment process. Following a discussion of the last two stages of the adjustment process, the adjustment process in its entirety will be discussed.

Stage Three: Learning to Live

The heart attack disrupts one's sense of control to such a degree that the individual must learn, once again, to live. In order to learn how to live the heart attack victim must negotiate through an adjustment process that is plagued with uncertainties and doubts. These individuals must discover a way to put their lives back together. They must learn to trust their bodies again and must reconstruct a life-style that they can tolerate and maintain. Included in this stage are three phases: preserving a sense of self, minimizing the uncertainty, and establishing guidelines for living. There is a reciprocal relationship between the second and third stages of the adjustment process. The ability of the individual to come to terms with the event affects the strategies utilized in the third stage and the strategies utilized in the third stage, in turn, affect the process of coming to terms with the event (see Figure 4). For example, if the informants found that the strategies they selected were ineffective, they would return to the process of coming to terms. Similarly, those individuals who feared that they would remain physically disabled returned to the process of coming to terms once they experienced some improvement. The way in which an individual comes to terms with his or her heart attack affects the strategies to be used as he or she attempts to learn to live again. However, as previously mentioned, the attitudes that a heart attack victim holds are subject to change over time. Consequently, the processes of coming to terms with the event and learning to live are cyclical.

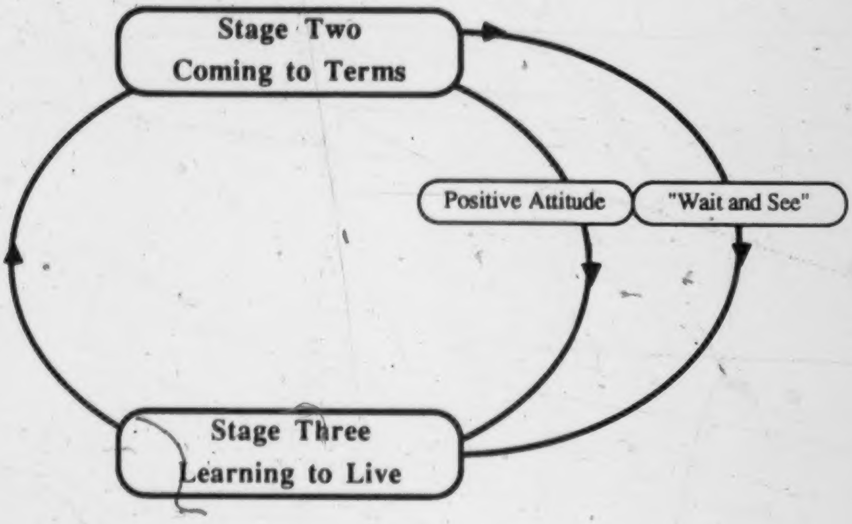

Figure 4. The Reciprocal Relationship Between the Second and Third Stages of the Adjustment Process.

Preserving Self

A heart attack disrupts one's sense of self in that it undermines a sense of confidence and self-worth. A heart attack threatens one's independence and consequently, an individual's roles and responsibilities shift dramatically. Throughout these changes the heart attack victim must struggle to preserve a sense of self. She or he must struggle to maintain a personal identity other than one of "patient" or "invalid." This was one of the most taxing struggles for many of the informants in this investigation. As one informant stated:

> I: You've got to prove to yourself that you are not a cripple because to be a cripple is to be a loser. Isn't it? You know from the minute you start kindergarten you're taught not to be a loser. The only thing that counts in our society is to be a winner. Losers are nothing!

The informants indicated that much of their sense of self-worth was related to what they did as mothers, fathers, workers, spouses, men, and women. The heart attack disrupted these well defined roles. To have these roles stripped away was often devastating. As one informant stated, "I think the most difficult thing was feeling useless. You couldn't do anything." To be considered, by oneself and by others, as incapable was extremely threatening. "I just don't like somebody doing everything for me and thinking I am really restricted."

All of the informants indicated that they were anxious to return to the ways of life they had previously enjoyed. Some indicated that they were "raring to go" before they were discharged from the hospital. Others wanted to return to their previous life-styles, however, they were afraid that they may experience a second heart attack if they pushed themselves. Despite these desires, the informants were unable to "pick up where they left off." All of the informants initially complained of extreme fatigue. In addition, they were all informed, by various health care professionals, that many of their usual activities had to be curtailed for a period of six weeks to three months. Most informants were given instructions regarding what they should not do. Because of these restrictions and their physical limitations, they were unable to resume "a full life," as termed by one informant. In order to preserve a sense of self under these restrictive conditions, the informants utilized two strategies. First, they managed their role transitions. Second, they attempted to balance their needs and supports.

Managing Role Transitions.

The individual who experiences a heart attack is quickly and without warning cast into the role of "patient." Many of the informants indicated that they were extremely uncomfortable with the patient role. As one informant stated, "I'm not used to being waited on. I didn't like to be waited on. I wanted to do my own thing." Both men and women in this investigation had difficulty accepting the patient role. However, the reasons for this difficulty tended to differ between the male and female informants. Many of the female informants indicated that they preferred to give rather than receive care. One woman stated, "I like to do things for other people, but I've never really wanted to be waited on." The female informants in this study tended to see themselves as care-givers, not care-receivers.

Many of the women attempted to protect their mothering roles. They felt particularly uncomfortable with attempts made by their children to provide comfort. In order to maintain their mothering roles, the women attempted to continue to demonstrate care and concern for their family members. This care took the form of minimizing their own conditions in order not to worry their children. As one woman stated:

> I: I didn't want them to get too upset because it was a bad time for them too....So I would just try to minimize everything to them. I'd say things like, "Don't you know it'll be okay." I felt I had to be cheerful otherwise they would have just gone overboard."

Other women attempted to discourage their family members from visiting them in the hospital in order not to "burden" their loved ones. Many of the female informants stated that they spent a great deal of time, while in the hospital, worrying about how their husbands and children would handle their illness. One woman expressed the concern that "it was harder on the children than it was on...[her]."

The majority of male informants enjoyed the attention of family members while hospitalized. One informant stated, "I liked the attention. It made me feel loved. I mean, it's the clearest signal I've had in our 16 years of marriage that she really loves me." Rather than discourage the attention of family members, most of the male informants encouraged it.

The major aspect of the patient role that the male informants disliked was the threat to their breadwinning role. Many of the men interviewed were concerned about being absent from work. Some attempted to have their work brought to them in the hospital.

> I: I was always doing something and then, all of the sudden to do nothing. I found it very frustrating in the hospital to sit and do nothing. I felt that if someone brought me some work to do, I could do it and they could pick it

> up and take it back. But no, they wouldn't let me do that either because that's what put me in there.

Being a patient prevented them from continuing the breadwinner role. Without this role they felt "useless." As one informant stated, "You are the breadwinner of the family. You have the status. And, all of the sudden you go from having the status to being nothing." The female informants who were employed outside of their homes were not initially concerned with the continuation of their work. Their initial concerns lay with the care of their family members.

The majority of the informants interviewed were eager to leave the hospital. However, two informants indicated that they felt comfortable in the patient role and were anxious about their discharge. These individuals were reluctant to leave the security of the hospital. One of these informants stated, "The hospital staff know exactly what's happening....I felt safe and secure while I was in the hospital." These particular individuals were extremely hesitant about the future and required much reassurance. Neither had come to terms with his or her heart attack prior to discharge from the hospital.

> I: I was afraid to leave. I thought, you know, "What if I have another heart attack?" At the hospital I'd be attended to right away....I mean they bring you your pills at a certain time and you're looked after pretty good. And then you think, "Gee, when you go home you're on your own. Am I going to make it? Am I going to manage?" Yes, it was a worry. Oh, the first week I think I was so scared at home. I was scared of having another heart attack and not getting to the hospital in time."

Once the informants were discharged from the hospital they were faced with the challenge of resuming their previous roles. The informants were told by the health care professionals attending them that their "full" rehabilitation would require six weeks to six months. Many of the informants were discouraged about this protracted period of time. The thought of "taking it easy" for three months seemed interminable to many. By far, the greatest complaint all of the informants held was that they felt "useless." Many of the informants felt "caught" between the roles they had once enjoyed and the patient role. They did not feel "legitimately sick," yet they did not feel well enough to resume their previous roles. As one informant stated, "To be just not able to do anything, just to be lying around and being useless. I think this was the most difficult thing out of the whole heart attack." Several factors impeded the informants from resuming their previous roles including: the efforts of their family members to protect them, the restrictions that the health care professionals placed on them, and their physical limitations.

Many informants believed that their restrictions from certain tasks diminished the value of their existence. They considered that who they were as people was directly tied to what they could accomplish. To have their abilities limited by a heart attack was devastating. The time spent at home was consequently difficult to fill. The meaning that life once held was diminished.

> I: I find the worst part about it is sitting at home being idle. It is very frustrating. I guess I was a workaholic to a point. And to sit and not do anything, well. Like, when I was discharged I said, "Well, now I can go home. I can do some exercises." I was overweight. I knew that without having been told. I could do some exercises to strengthen and as soon as I talked to my doctor he says, "You don't do anything!" I says, "Well, can't I?" He says, "You can go and you can walk, but you're not to leave the house." For the first week I was housebound. I couldn't go anywhere. Well, maybe I could have because there was nobody here....I found it very frustrating to get up and not have a purpose in life except to maybe exist until the next day.

All of the informants believed that their relationships with their family members had changed as a result of their heart attacks. The return home was often awkward as their family members treated them "differently." This change in behaviour, on the part of family members, reinforced the fact that the informants had changed. Many of the informants indicated that they felt extremely uncomfortable with their family members' attempts to protect them. One informant stated, "Instead of me doing everything there was everybody doing everything for me. That seemed really strange because I always take care of my own household." Most informants indicated that they allowed their family members to care for them for the first three to seven days. After this period of time, being treated as "invalids" became intolerable. They felt that they could no longer acquiesce to their families demands to protect them and they attempted to assert their independence.

All but one of the informants described a situation in which they had to assert themselves as a person and re-establish a role for themselves in the family. They were unable to tolerate the protectiveness of their family members, for this protectiveness made them feel like "invalid[s] who...[were] unable to think and feel for...[themselves]." They believed that they had to let their family members know that they were capable adults.

> I: Well, there was a little anger building up in me because she's the oldest one and she was the most protective. Like, I would get up out of my chair and, "No, no mom, don't. Where are you going? What are you going to do?" "I want to go to the bathroom." "Well, okay." And if I'd get up to do something, "No, no mom, no, no. You can't do that. No, no. Let me do it. Don't go upstairs again, oh no." And, she'd be walking behind me and follow me up the stairs. I said, "I can go up and down the stairs twice a day and that's all I do." I'd go to take a spoon out of the cupboard drawer, "No, no mom, sit down I'll do that for you." Well, it just finally got to me....So I finally just had to yell at her. And, I yelled at her really good.

Attempts to assert themselves were often difficult for the informants to manage. They appreciated the care and attention that were offered to them by their families. Indeed, most recognized that they required some support, yet they wanted to believe that they were "independent and in control." By asserting their independence, they ran the risk of shutting the door to all assistance.

Many of the informants stated that their family members believed that they were less capable as a result of their heart attacks. For example, two of the women in this investigation described being offended because their daughters no longer asked them to care for their grandchildren. Family members often did everything possible to shield the informants from possible stress. According to one informant, the reason for this highly protectionist attitude was due to the fact that "they don't want to think that they're going to be the cause of something else happening to you." The result of this treatment was a perception of isolation and of not being needed. This isolation was most stressful for the informants. One informant told her children, "You're going to make me have another heart attack if you don't let me do anything!"

It was often difficult to relinquish the tasks which an informant associated with his or her particular roles. To allow others to perform these tasks was often frustrating.

> I: I used to enjoy going out and shovelling snow if I had the time. It was a period of tranquility where I was out there on my own. I could think what I wanted to think. I solved a lot of problems at work, just a general feeling that you could do what you wanted to do and you didn't have to think. I really enjoyed that period. And, now she [his wife] has to do the shovelling. That was a frustrating thing coming home and she had to do the shovelling.

The realization that certain tasks were prohibited was difficult for the informants as it reinforced their perceptions that they were useless. As one informant stated, "You just can't sit for the rest of your life without doing anything." These restrictions also affected the ways in which these individuals perceived themselves as people. One informant was asked by a stranger to help lift a package shortly after returning home. Although he was tempted to agree, he knew he should not assist as the package was extremely heavy. "I thought she was going to say, 'Big strong man like you, you should be able to pick it up.' But, she didn't."

Although most of the informants were reluctant to discuss the resumption of sexual activity, one informant indicated that, although he was aware that he was able to resume sexual activity, he was afraid that others might believe he was impotent. He described a situation in which his capabilities as a "man" were questioned.

> I: I'm sitting there listening. Probably it's a misconception that people with heart attacks can't have sex and they asked me at this meeting if I was coming back to work. And I said, "Yes" and they said, "Why?" I said, "Well, there's no girls at home that want to play games." And they turned around and they said, "Hey, you watch it. You have had a heart attack. You can't have sex!" And I said, "Where in the hell did you get an idea like that?" It's not me that needs to learn about the sex. It's the others who don't have the heart attack!

For this informant, the heart attack threatened his role as a sexual human being. The actual resumption of sexual activity was not as important as the beliefs that others held regarding his sexual capabilities. In order to cope with this threat, he believed that he had to "set the record straight."

Many of the informants found it difficult to say "no" to certain activities and tasks. The heart attack left the informants with no visible limitations. Acquaintances had no knowledge that the informants had experienced a heart attack unless they were told. This often caused a dilemma. To "tell" was to admit one was not well and presented the risk of being considered an invalid. To avoid telling was to run the risk of being asked, or expected, to perform activities beyond one's abilities. One woman attempted to resolve this problem by refusing to wear her makeup once she returned home. She believed that without her makeup she would look tired and would not have to deal with the issue of whether to "tell." Another informant stated that he utilized the following approach when faced with the question of whether to inform others that he had experienced a heart attack:

> I: I find that if you tell them outright then they're not playing games. But if they don't ask me I'm not going to turn around and tell them. A guy asked me to help shove his car, push his car over. And I said, "I can't do that." He looked at me and he says, "You should be able to put a lot of weight behind it." I said, "Look, I've had a heart attack. I'm not going to shove your car." He looked at me and I said, "But, if you want, I'll push it, provided you accept all the problems."

Many of the informants felt caught between the patient role and their previous roles. They were not well enough to carry on as before, yet they were not "sick" enough to remain a "patient." This transitional state became easier to manage as time progressed. The informants used a number of strategies to manage their role transitions. When necessary, they emphatically asserted their independence. In situations where they were unable to be independent, they either learned to incorporate their limitations into their life-style, or they began to "bend the rules." Learning to incorporate these limitations was no easy task. One informant stated:

> I: You have to adapt to the fact that you cannot do what you used to do and it's a blow to your ego because you want to try and do things....When you find that you better not, for your own good, believe me, your ego takes a plunge. You know you have to learn that you can't do certain things and that's all there is to it.

All of the limitations which the informants experienced tended to leave them believing that they were "dependent" and "useless."

The men in this investigation were less apt to bend the rules than the women, as they were removed from their work settings. Although many men were anxious to return to work, their employers' regulations and physicians' advice held them back. Whereas, most of the men returned to work within a three month period following their heart attack, most of the women resumed all of their household responsibilities within six to eight weeks.

Many of the women in this investigation chose to "bend the rules" in the area of housework, rather than remain dependent on others. They found it extremely difficult to return to their homes, to "their places of work," and not resume the necessary tasks. "I felt I wanted to do my own housework and do my own thing and do what I wanted. And, I found it hard not doing what I wanted." The women in this study strongly believed that no one could do their housework as well as they could. They considered their husbands, in particular, incapable of "see[ing] the corners" that needed cleaning. As one woman stated, "I think, if it wasn't for the woman, I think a lot of things would slide. If we expected men to do certain things, they wouldn't get done." It was intolerable to be "sitting around doing nothing" and to notice that the house was not clean,

> I: Well, I'm sort of a bit of a clean-freak and if I see things, anything that needs to be done, I'll just do it you know. If I see just anything, a little bit of dust there, or here, or whatever, I'd have to get my duster.

Some informants initially allowed their children and husbands to help them. However, this did not prove satisfactory for long. The resumption of housework was "an automatic thing." Some of the informants realized that they were resuming activities at a quicker pace than was recommended by health care professionals. However, they saw no alternative. Many felt that they could not ask their husbands to iron the clothes, make the beds, and prepare the meals. Most were able to enlist the help of their husbands with the vacuuming and floor washing. However, by the end of the first six weeks they did not feel comfortable requesting this assistance either. Many of the women in this study did not view housework as "work." They did not believe that exertion was required for tasks such as tidying and ironing.

> I: One day I started getting the angina. I mentioned it to them at the clinic. I had done, you know, the beds and tidied the bathrooms and then in the afternoon I went down and I ironed and they said, "Well you know, you should iron maybe two pieces at a time to begin with." And, here I had stood there for half an hour. But, I was so mad at myself. I kept on saying, "I'm sure I can do half an hour's ironing. I'm not doing anything!"

Some of the women interviewed felt pressured by health care professionals to ask their husbands to assist them with the household tasks. However, the women felt it was not fair to ask their husbands for assistance with "women's work."

> I: It's a different world now with both parents working. With my children, both parents are working and I feel that the husband should help. But, when I had my children my husband worked shift work twelve hours a day and you didn't expect him to come home and do the dishes and stuff like that. It's pretty hard. It's hard to change him now, you know. And, I don't intend to make him change. I mean I don't.

Many of the men in this investigation stated that they helped with housework while they were recuperating in order to "fill in time." However, they did not resume the same amount of activity as quickly as the women in this study did. Additionally, those women who worked outside of their homes deemed it necessary to resume household activities long before they returned to their paid employment.

One man in this investigation returned to work three weeks following his heart attack, against his physician's advice. His decision to return to work was based on the belief that he was "useless sitting around doing nothing." He was unable to tolerate the absence of any "useful" activity. The following statement summarizes his view of the rehabilitation program:

> I: I'm not a jock. I have no use for exercise. It's a nonproductive kind of activity for me. I like to say at the end of the day, "Well, I've accomplished this." But, you step off those exercise machines and what have you accomplished? Nothing!

Most of the informants could accept a short period of "time out" from their regular routine, knowing that a period of recuperation would benefit their health. However, this man was unable to remain at home and continue to feel valued as a person. He was never "convinced" that he could do anything to improve his health. He believed that the heart attack was an inevitability which had to be accepted and forgotten. He believed that the only option open to him was to return to work. By immersing himself in his work he was able to return to a role in which he felt comfortable. In the first months back at work, he would remain at work for the entire day and returned home exhausted. He would retire for the evening immediately on his return home and would remain in bed until the next day. Remaining at work was so important to this man that he virtually ceased to function in any other role. He isolated himself from family members and friends. He was willing to make this sacrifice in order to continue working. "I've sacrificed my leisure time for my work and that was my choice....So again, I guess my life is still regimented and revolves around work."

This informant's behaviour clearly exemplifies the importance of roles to one's integrity. He was extremely threatened by the potential loss of his role as a worker. He had witnessed many of his friends develop health problems and then "vegetate." This informant believed that "...if you're capable of doing the work I consider a pay cheque for not doing it as a bit of welfare." Although perhaps a blatant example, many of the informants struggled in similar ways to reclaim their roles. These roles were extremely important as the resumption of previously held roles provided a strong indication that they were improving. On the other hand, the failure to resume roles provided proof that they were ill.

Balancing Needs and Supports.

Initially, the individual who has experienced a heart attack is faced with a loss of control. He or she is uncertain about the future and is unable to function independently. In order to regain a sense of control, the individual requires the assistance of others. Closely related to the strategy of managing role transitions is the strategy of balancing needs and supports. The individual who experiences a heart attack is often overwhelmed with the assistance offered by others once he or she returns home. In order to preserve a sense of self worth individuals must attempt to balance their needs with available supports. An integral part of the balancing of needs and supports is the skill of requesting and refusing assistance.

Four outcomes are possible as a result of the individual's attempt to balance his or her perceived needs with supports (see Figure 5). The individuals who perceive that they are in need of a great deal of support and who have the supports available to meet these needs are depicted in Cell A of Figure 5. Although most of the informants believed that they belonged to this category during the initial stages of hospitalization, many of them found that it was difficult to remain in this situation for long. To be on the receiving end of a supportive relationship for a protracted period of time left them feeling incapable and indebted to others. If the informants believed that they needed a great deal of support and this support was provided unconditionally, their beliefs about their inabilities to care for themselves were reinforced. They began to feel like "invalids;" unable to care for themselves and dependent on others. Constantly requiring and accepting support intensified their feelings of "uselessness." As one informant stated:

> I: Well, I just am sort of a real useless feeling. Here I haven't got the energy to do this or do that or accomplish something and this is real upsetting....I think everybody needs to be useful. If you have a feeling of being useless I think you feel what's the use of living sort of thing. So, you need to feel useful.

In particular, many of the informants had difficulty accepting the "unconditional" support of their families. Whereas the support provided by health care providers could be rationalized on the basis that they were "doing their jobs," the support of family members was seen to reinforce their own inabilities.

> I: You eventually don't want to think that you are that bad, that things have to be disrupted. You want to feel that you're better maybe than what you are....It's like the more they fuss over me the more I'm going to feel like I'm really an invalid or something. Don't disrupt your lives, go about and do what you're doing with your families and you know I'll be okay.

In order to preserve a sense of self, individuals who believed that they required considerable support often attempted to demonstrate to their families that they loved and cared for them. It was essential that they be able to reciprocate the care that they received as caring for others enabled them to preserve a sense that they were whole human beings. Reciprocity was an essential element in the balancing of needs and supports. If the informants believed that they were incapable of reciprocating support, either immediately or in the future, they felt devalued as human beings.

		Perceived Needs	
		Many	Few
Perceived Supports	Many	Considers self an "invalid" A	Considers self "overprotected" B
	Few	C Considers self "abandoned"	D Considers self "nearly normal"

Figure 5. Balancing Needs and Supports.

As the informants began to improve and gain strength in the immediate weeks following their discharge, their need for support diminished. If their family members were not cognizant of their improvements and continued to provide support in the same ways, without modification, the situation depicted in Cell B of Figure 5 developed. In this case supports outweighed needs. This situation was extremely difficult for the informants. Often they felt obliged to accept the support offered. They believed that to refuse the offered support might result in the cessation of all support. One woman stated, "I was wishing that they wouldn't fuss so much, but then on the other hand, if I told them not to fuss I might be rejected or something." The acceptance of support, which was not required, left the informants feeling more indebted to their families and more useless. Many described themselves as "dolls" or "babies" who were cared for by their families without consideration for their own needs or desires. The attitudes of friends and families were described as condescending.

The ways in which informants coped with this imbalance of needs and supports varied. One individual found the protectiveness of his wife intolerable. He felt "degraded" by her constant attempts to protect him. He believed that "...she was almost creating a cardiac cripple out of...[him]." He perceived that she was attempting to control him in her efforts to protect him from the outside world. His solution to this imbalance of needs and supports was to leave his wife and, subsequently, he divorced her.

Other informants were able to "handle" the overprotective behaviour of their family members. These individuals perceived the acceptance of support as a "favour" they were bestowing on their concerned family members. They believed that the "least" that they could do to show their appreciation was to let their family members express their concern. One informant described his acceptance of his wife's concern in the following manner:

> I: It doesn't bother me because I know in my mind, I know in my heart that it's not really needed as far as I'm concerned. But, if it's going to make someone else feel more comfortable, by all means, because it doesn't hurt me at all.

The balance of needs and supports was thus restored. By recognizing their family members' needs to support them, the informants were able to reciprocate the caring and concern they initially received. By accepting support, the informants believed that they were in fact, supporting their family members.

Some informants, who were unable to accept the protectiveness of their families, utilized a third approach to restore a balance between needs and supports. They refused to accept the support offered. As described earlier, this often consisted of demanding that their families and friends allow them the space necessary to "learn their own limits." In order to make their point, they utilized a variety of tactics. They screamed, explained, and discussed, in a variety of manners, to let their family members know that they were intelligent adults who could use excellent judgement and assume self-responsibility. One informant utilized a rather unique approach to explain to her children that they no longer had to worry:

> I: I made a point of telling them, "I pulled the fridge out today and scrubbed behind and boy it must have been six months, you should have seen the dust." Just to let them know I can do things and it doesn't bother me at all. And now they know they don't have to get excited

There were two informants in this investigation who believed they did not have the necessary support they required. Their needs exceeded the support offered (see Cell C, Figure 5). One of these individuals was divorced. She had few friends as she spent all her time working and caring for her family. Her teenage daughter, who lived at home, was not "able to provide" the care and support that she believed she required. Her strategy for dealing with this perceived lack of support was to "try...[her] best to manage." Often, she felt totally isolated and "abandoned." She eventually realized that she would have to seek new avenues of support if she was going to be able to continue. She described the period in time in which she was without support as "devastating." She relied on her own resources, particularly on her belief that she was going to improve. "I just kept looking forward to feeling better."

The other informant, who believed that his needs for support were not met, believed that his wife "resented the fact that...[he] had the heart attack." He sensed that she was unable to empathize with his need to recuperate. He stated:

> I: There's resentment there because she gets up and goes to work in the morning and I stay home sleeping. She feels there's nothing really wrong with me right now. Really, I don't think there's anything wrong with me right now.

The perception that his wife thought there was "nothing wrong" caused him to believe that he was malingering. Initially, he tried to encourage his wife to read some literature about rehabilitation following heart attack, but she refused. He felt he was unable to convince her of his need for recuperation and felt abandoned. He believed that she should have been able to express some form of concern. Eventually, he responded to this "lack of concern" by pushing himself as hard as he could to prove his abilities and disprove the belief that he was ill or malingering. Rather than continue to ask for support, he attempted to change his behaviours to match her expectations.

An essential element in achieving a balance between needs and supports was a spirit of cooperation. The cooperative spirit involved the ability of the informant and her or his family members to freely accept, give, and receive support (see Cell D, Figure 5). These individuals described themselves as "nearly normal" in that they felt both respected and cared for as whole human beings. They were neither dependent nor felt abandoned, rather they felt capable of playing a role in their own adjustment. In this context needs were not viewed as separate from supports, rather there was a mutual exchange of support between informants and their family members. A spirit of cooperation existed which involved the family members respecting and trusting the abilities of the informant and the informant respecting the needs of his or her family members to express concern. This spirit of cooperation was expressed by one informant in the following manner:

> I: It was just a case of helping each other a little bit, you know. It wasn't like he was perfectly healthy and he could have taken over and done things for me....We managed together to get by....We talk more. More conversation, more getting things out in the open.

When the informants and their families were able to cooperate, support, and respect each other's needs, the informants expressed a sense of control. They felt encouraged and cared for. They were able to develop a sense of trust in themselves as this was reinforced by their family members. This, in turn, enabled them "to venture out and find...[their] own limits."

Minimizing Uncertainty

Individuals who experience heart attacks are faced with uncertainties regarding activity resumption, diet, and stress management. They are uncertain about "what to do and how to do it." Particularly, as they return home and are removed from the structure of the hospital environment they have difficulty making decisions regarding their own care. They are aware that their bodies have changed and that the "rules of living" have been altered. Yet, they are unsure of what these new "rules" are. In addition, individuals who are unsure about their abilities to recover are concerned about the possibility of death and are fearful that they will not improve.

The informants in this investigation described a variety of uncertainties which they faced and attempted to minimize. Many were unsure about how quickly they would be able to progress. The course of recovery seemed vague to many:

> I: If you're cut open to be operated on you know that in time that's going to heal. You're going to feel better once your strength comes back. But with this...I'd never had one before so I was a bit leery about just how I was going to make out.

> I: Thinking that I wouldn't be able to get back to the level I was before, you know, cause you don't know. It's an unknown fact. You just have to wait and see. Nobody can tell you because nobody knows. Everything is uncertain.

Many of the informants indicated that they wanted to know in "black and white" what they could and could not do. They felt ill equipped to make decisions on their own:

> I: It would be nice to know exactly why and when and how right down to the minute. And, it would be nice if you knew all of this right at the very beginning...because it's the uncertainty that makes you feel so bad. You'd like to have some answers.

This uncertainty affected every aspect of the informants' lives. Not only were they unsure about what decisions to make, they remained uncertain about the decisions they had made:

> I: I went to a hockey game and while I was watching I was getting so excited I had to actually take a few nitro pills because of my angina pain. I don't

> know if it was even advisable for me to go there because fellows have died of situations like that.

This uncertainty was also experienced in terms of their ability to engage in rehabilitation programs. They were unsure of what was expected of them. They were uncertain if they would be able to "handle" the exercise programs. Even the equipment presented uncertainties. As one woman stated:

> I: I was quite apprehensive about it, you know, because you have to learn to take your pulse and work on the machines and the treadmill and that. And I thought, "What if I can't manage?"

Many of the informants were uncertain because they felt vulnerable. They were afraid that they might inadvertently "trigger" another heart attack. These individuals felt as though their bodies had "betrayed" them; they had been betrayed once before, it could happen again.

> I: One reason I was pretty careful about what I did physically and why I wanted to be under observation was because I had no idea what in the world I might do to trigger this again.

In light of this uncertainty, every action was carefully scrutinized. Nothing could be done without initially considering the heart attack.

> I: There were a ton of uncertainties mostly like, "Can I lift this or not lift that? Can I spend four hours out?" Walking around, I mean, how much is too much? Which activity should I do and which ones shouldn't I do?

For those individuals who persisted in the belief that they would not get better, the uncertainties of living were omnipresent. Two informants expressed a fear of going to sleep at night as they feared they might never wake up. Another informant confided that she was afraid that she might have another heart attack while in the bath. Her solution was to complete her bathing as quickly as possible. These uncertainties were paralyzing for some. One informant refused to leave her home as she feared something might happen.

Some of the informants stated that they were uncertain because they could not understand what had happened. For these individuals, it was extremely important that they gain some understanding of the "functions" of the heart. To understand how the heart functions provided an understanding of what could be done.

> I: Well, I was not worried about having another heart attack. I was worried about either inducing some sort of irregularity or whatever because I'd had a couple of episodes where I'd had some irregularities that they had to deal with. I was primarily worried that I might strain the heart muscle and hurt the healing process or whatever. Those were my major concerns....Even though we were reading a lot, I still didn't understand all the functions of the heart and all the things you could do that might do something about that.

In order to regain a sense of control, the informants attempted to minimize the uncertainty they experienced. They utilized a variety of strategies in order to accomplish this, including gauging their progress, seeking reassurance, learning about the heart, and practicing cautiousness. All of these strategies were directed toward the minimization of uncertainty. If the informants were able to successfully minimize their uncertainty, they were able to achieve a sense of control. Until a sense of control was regained, the informants were unable to start "living again."

Gauging Progress.

Informants were able to minimize their sense of uncertainty if they were able to believe that they were making progress. The gauging of their progress was extremely important as it provided "proof" that they were improving.

> I: When you look back at it and you say, "Hey, I did this and that and I got away with it and I slept like a log and I didn't get angina, I didn't have to take nitro," you feel good don't you? And, you can say, "I'm getting better because I can do all these things." And, you feel good about it!...In a way, you've got to have gauges. You really have got to have them.

Most of the informants desperately wanted to believe that they would be well again. One informant stated, "I just have got to somehow get the feeling in my head that I'm okay." The informants utilized a variety of methods to gauge their progress including goal setting, reviewing their progress, and making comparisons with others. The method that provided the strongest "proof" of improvement was usually favoured.

All of the informants engaged in goal setting of some kind. They believed that if they could set goals and work toward the accomplishment of these goals, they would be able to determine that they were indeed improving. The ways in which the informants set these goals varied. Many would set up daily goals and attempt to meet them. This not only provided a means of gauging their progress, it also provided structure to what was considered a "boring" existence. As one informant stated, "I set little goals for myself each day and try to get them all done. Even though it is nothing, it's something for me.

Most of the informants initially had difficulty developing realistic goals. They were unsure of what they could realistically accomplish.

> I: I think initially I was extremely disappointed because, don't forget, I thought I was doing fine until I got into the real world of cold air. And, now I've got to go from A to B. Before, in the hallways at the hospital, you've got no place you have to go. When I got home I said, "I'll walk down to Al's house today" or something. And, you find out you can only make it halfway. You've set a target and you sure can't meet that target. So, you've lost your target and you think, "My God, is this as far as I'm going to go."

Once the informants were able to establish a "baseline" for their abilities, they were able to set realistic goals. The meeting of a goal was then viewed as a "victory." These victories provided the informants with a feeling of "satisfaction and accomplishment." However, difficulties continued to arise if they were, for some reason, unable to meet the goals they had established.

The establishment of goals provided some of the informants with a sense of accomplishment. By working toward goals, they were able to establish some direction and purpose in their lives. One woman stated, "What's the purpose of getting up in the morning unless you've got something to get up for and something to do, to think about, somewhere to go." Rather than viewing the rehabilitation period as a void in their lives, the establishment of goals provided the informants with a sense that they were working toward something.

Those informants who remained uncertain about the future had difficulty establishing goals. Over time, as these individuals sensed that they were progressing, their attitude toward the future changed. They were encouraged by the progress they made and, consequently, their attitude toward the future began to change.

> I: I could see every single day that I went out walking, the next day I was better than the day before. And, I could tell with the rapid improvement in most of my physical signs that if I could do that much in a week I was going to get better. Suddenly, I didn't feel very invalid-like anymore. In three or four weeks I could see my physical progress increase so rapidly that I began to believe that maybe I was going to be okay....That victory reinforced the fact that I was probably going to be able to lead pretty much a normal life the rest of my life.

For these individuals, their abilities to set goals increased as their evaluations of themselves improved. Once they believed that they had a future, they were willing to take steps to structure and gauge their progress.

The most difficult goals to establish and meet were long term goals. The majority of informants held the belief that they should "take things one day at a time" and were reluctant to make long term goals. Those who engaged in long term goal setting were often disappointed. Many of these goals were based on information provided to the informants by health professionals. Some informants would take information about the healing of the heart and interpret it to mean that they would be well in a certain period of time. For example, one informant believed that she should be back to normal in three months as this was the period of time that she believed it would take the heart to heal. When the three month anniversary of her heart attack passed and she was still unable to resume her previous pace of activities, she became extremely disappointed. Following this disappointment, she continued to "poke up" the date by which she should be improved and continued to face disappointment.

> I: They said your heart is supposed to be healed in eight to twelve weeks, so I believed it. I said, "Well, I'll be home free. Then I can do whatever I want." ...I've changed my goals so often now there's no use setting them really. There's no use pounding the post too hard. You've got to be able to move it.

The purpose of goal setting was to gauge their progress. If goals were repeatedly not met the informants became extremely discouraged and ceased goal setting.

A second method used by the informants to gauge their progress was to review their progress. This method of gauging progress was highly related to goal setting in that it provided the informants with a sense of accomplishment and improvement. However, it did not necessitate the formal establishment of goals. Reviewing progress involved consciously reviewing all of the progress made. Through this review, the informants were able to gauge how much progress they had made in the previous weeks. In turn, this provided evidence that they were improving. Time was a great healer for many of the informants. The answer to unmet goals was often "give it time." Time also provided proof of improvement. For example, one informant, who was afraid to leave the hospital, initially remembered thinking, "Gee, I've been home from the hospital for a week and nothing's happened. I must be okay." Another informant described the importance of time in the following manner:

> I: As time goes on you just realize you are improving. I was just thinking, well, on the second of April it was exactly three months since I got my heart attack and I am getting stronger and stronger. I can remember when it was just two weeks after I'd got out of the hospital and I couldn't hardly do anything. I can feel myself little by little all the time just getting a little stronger.

The progress not readily apparent in the day-to-day existence of the informants became clearer through a review of their progress. Small improvements took on larger dimensions when they accumulated over time. Even those informants who were experiencing a great deal of difficulty with the adjustment process could review their progress and elicit some positive evaluation. Initially, the simple act of discharge from the hospital constituted some form of progress. However, it was important that the process of review included a gauging of progress over time. If an informant felt stalled in his or her progress, he or she would cease the process of reviewing progress.

The final method of gauging progress was to make comparisons with others. The focus of these comparisons was to consider how much worse off they could be. Using this method, the informants attempted to find a candidate, preferably with cardiac disease, who was "worse off" than themselves. Accordingly, they made comparisons between themselves and this other individual. This, in turn, provided a gauge of progress, as it reminded them of how much they had improved and how much worse their situation could have been. Every informant made comparisons of this nature. If an appropriate candidate with cardiac disease could not be found, an individual with another form of disability or disease was chosen. The only criterion for selection of the individual for comparison was that she or he was deemed "worse off" than the informant. This method of gauging progress was highly effective. As one informant stated:

> I: You start to wonder if you're the only one that's like this or like that and you talk to them and sit in the coffee room and talk like, "How was your heart attack? And what can you do now?" And, then somebody says they're taking eight kinds of pills now and you think, "My God, I'm a lot better off than you are!" You make yourself feel good....You realize that there are other things that can be a lot worse.

By far the most popular place for making comparisons was in the cardiac rehabilitation programs. As informants became veterans of cardiac rehabilitation programs, they enjoyed comparing themselves to the newcomers as it served as a strong reminder of the progress they had made.

> I: There was a new girl in the exercise class. She was in the bathroom hooking up the monitor thing. She didn't know how to do it, so I was showing her how to do it and she said, "Oh, I don't know. This is my first day at exercise, it might be too hard, it mightn't be any good." And I said, "Believe me it's good." I saw how scared she was and I realized how far I'd come.

If informants were unable to identify someone at the cardiac rehabilitation classes for comparison, they often chose individuals with other diseases. If they could believe that "it could be worse," they were able to examine their own situations with a different attitude. The comparisons provided evidence that things "were not so bad."

> I: There I am feeling useless and there is my daughter-in-law's mother in just about the same situation with M. S.[Multiple Sclerosis]. At least I could look forward to getting better, whereas this lady couldn't. This lady could look forward to getting worse. It kind of shook me up. It stopped me from feeling sorry for myself. It kind of says, "Hey, just a minute here. You're not as bad off as you think you are. It could be worse."

> I: I would be a lot more concerned if it had been a spinal injury or a stroke....I'm glad it was a heart attack instead of a stroke. If I had to have one or the other, I'd rather go for the heart attack any day of the week.

The method of making comparisons allowed the informants to consider their conditions in a "new light." The condition took on a different meaning once these comparisons were made. This gauge provided a meaningful means for the informants to positively assess their conditions. In turn, these positive self-evaluations enabled the informants to minimize the uncertainty they were experiencing.

Seeking Reassurance.

A second strategy that was utilized by the informants to minimize uncertainty was the seeking of reassurance. If the informants were uncertain about their progress, their abilities, or their futures, they attempted to alleviate this uncertainty by seeking reassurance. Reassurance was always sought from health care professionals as it was believed that they were the only ones who "knew what they were talking about." A professional opinion was deemed to have greater value than the opinion of a lay person. A second source of support, which was extremely important to all of the informants, was the reassurance they received from other heart attack victims.

Reassurance was important because it helped alleviate the informants' fears of the unknown. By far, the greatest form of reassurance was provided through the cardiac rehabilitation programs. All of the informants believed that these programs "gave you confidence." This was extremely important as the informants were unsure of their abilities when they returned home. As one informant stated, "You need the program to train you. If you leave it to your own judgement you might do something wrong because you're a poor judge." The rehabilitation programs provided the informants with what they believed to be a safe environment in which they could test their limits.

> I: They push you to your limit, but they're right there. Like, you have the confidence in them that, you know, that you're not going to do anything that you shouldn't be doing. They watch you. They know what's happening to you.

In addition, many of the informants believed that the presence of health care professionals protected them from making errors in judgement. They were able to relax their vigilance of re-establishing control when health professionals were present to "care for them." Most of the informants judged that without the assistance of the cardiac rehabilitation program staff they would have done something "wrong."

> I: You could do everything wrong if you start on your own right away, if you're not put into a properly run class. I think that's very important. Because you put on the pasties [cardiac monitor electrodes] and the girl watches you on the scope [cardiac monitor] and if something goes wrong, and things do go wrong once in a while, she stops you or the person that it's happening to and says, "You better stop for a moment" or "You better quit for today."

Many of the informants expressed a sense that they were able to forgo the responsibility for their health problems while they were present at the cardiac rehabilitation center. This was the only setting in which they could "let down their guard," not because they no longer required a sense of control, but because they felt that the responsibility for monitoring and maintaining control could be safely handled by others in this situation. They deemed they were able to relax their vigilance as someone else was present to take responsibility. One informant stated, "It is their problem if they make me work too hard. If I fall down they are there to pick me up. So it was out of my hands and that made me stronger."

Informants also utilized health care professionals as sources of reassurance regarding their progress. They sought this reassurance in order to allay any fears that they were not "doing well." Informants were assured that they were doing well when health care professionals concurred with their evaluations; they felt they were regaining some of the control they had initially lost. However, they experienced a great deal of difficulty if the assessments they received from health care professionals were not congruent with their own. Figure 6 provides a schematic representation of the possible outcomes that can occur when professional reassurance is sought. Cell A represents those individuals who believe that they are "doing well." This belief is present when the informants' perceptions of their progress is in agreement with how they believe health professionals perceive their progress.

The situation in which the informant believed that he or she was doing well but perceived a different opinion from health care professionals is depicted in Cell B of Figure 6. These individuals described themselves as "devastated." One informant described his devastation in the following manner:

> I: Yesterday, you should have talked to me, I was really optimistic. Now today, they took it all away. I thought I was really doing great....I don't know, I always get this pounding feeling but it doesn't bother me and I just thought it is something that will go away. I thought I had it pretty well licked....I thought I had it by the tail. Now, I don't know what to think or do.

Having believed that they were progressing well, these informants were devastated by any insinuation that they were not. This incongruencey shattered their ability to judge their progress. One informant described experiencing an incongruity between her evaluation of her progress and a health care professional's evaluation as "a huge let down." The informants felt incapable of making decisions following the realization that they were unable to judge their progress. In turn, this heightened their sense of loss of control. These individuals found that they had to rethink the meaning their heart attacks had for them. They were forced to return to the process of making sense of the event, in order to develop some understanding of their present situations. Many who experienced this devastation considered the future tentative. They believed that their initial optimistic or positive attitudes had to be reconsidered.

Those individuals whose self-evaluations were negative and who believed that the health care professionals' assessments were positive are depicted in Cell C of Figure 6. They believed that their problems were not properly understood by the health care team. They were generally distrustful of the evaluations of the physicians and nurses. These informants were generally lacking in confidence. They were unwilling to believe that they were doing well. They described themselves as "misunderstood." Symptoms, such as weakness and fatigue, were of great concern to them. However, when they described these symptoms to their physicians and nurses, they felt they were placated. They were unable to accept that their symptoms were typical. This, in turn, caused them to lose faith in the established health care system. These individuals were torn between a fear that they were experiencing serious symptoms and a need to be reassured. This conflict was only resolved when the informants were able to establish some congruency between their self-evaluations and their perceived evaluations of the health care providers.

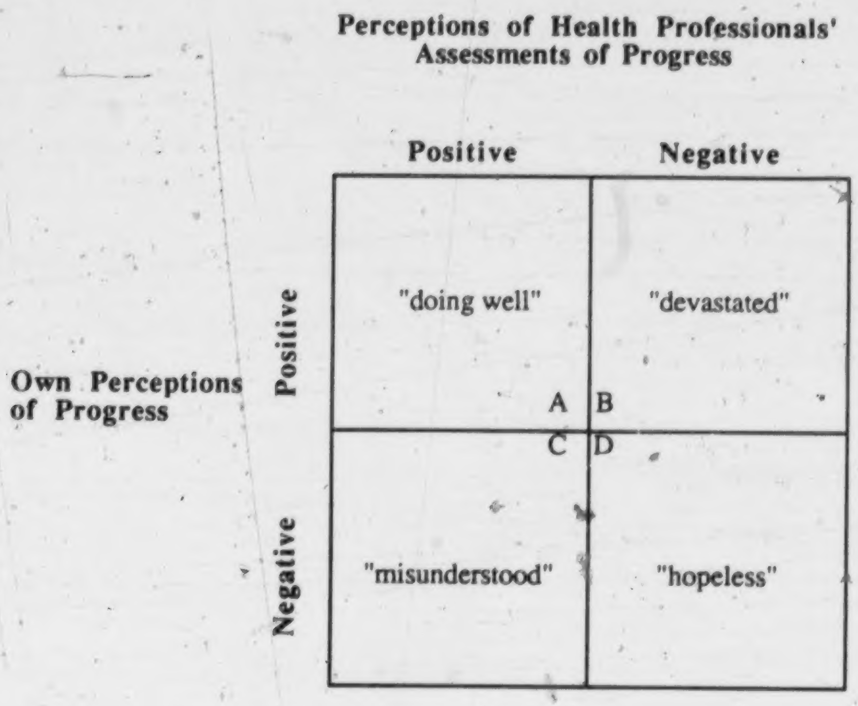
Perceptions of Health Professionals' Assessments of Progress
Positive
Negative
Own Perceptions of Progress
Positive
Negative
"doing well"
"devastated"
"misunderstood"
"hopeless"
A
B
C
D

Figure 6. Perceptions of Progress.

Those individuals whose self-evaluations were negative and who believed that health care professionals supported this belief are depicted in Cell D of Figure 6. These individuals described themselves as "hopeless." They believed that little could be done to improve their condition. One informant, who initially thought she was doing well, came to believe that the health care professionals thought she was doing poorly. In the face of this conflict, she adapted her self evaluation in order to be congruent with what she perceived to be the health care professionals' assessment of her. She became hopeless about her future, believing that little could be done to improve her health.

The seeking of reassurance did not always meet the informants' needs to minimize their uncertainty. In some cases, the effect was opposite in that it potentiated the informants' sense of uncertainty. Most of the informants were uncomfortable discussing this lack of congruence. They were reluctant to engage in perception checking as this might prove to confirm their worse fears. It is important to note the factors that led the informants to believe that health care professionals held "negative evaluations" of their progress. Generally, any comment that was not blatantly positive was construed to be negative. In one situation, a physician ordered additional tests for an informant. The informant interpreted this to mean that she was not progressing; that something was wrong. Many of the informants were emotionally fragile during their first six weeks at home. They were desperately seeking signs of hope. When these signs were not readily apparent, they became gravely discouraged.

Although the opinions of health care professionals were highly valued by the informants, another form of reassurance was found in other heart attack victims. As mentioned previously, the informants utilized others as a means by which to gauge their progress. In addition, the support and advice of others was extremely reassuring. "Having somebody to talk to, who has been through it" was considered an invaluable source of support. The cardiac rehabilitation programs provided a means through which support of this nature could be found. One informant stated:

> I: Those classes are good. You see everybody in the same boat and you talk about it and you begin to learn that it's not so bad. You think that you're the only one it ever happened to. My God. And, you find out you're not the only one in the world who has had their life upset.

The reassurance gained by watching others cope successfully with their heart attacks was invaluable. The suggestions and encouragement that other heart attack victims provided were extremely reassuring for the informants of this study. This form of reassurance was less threatening, as the individual was free to reject the opinion of other lay persons and seek advice elsewhere.

Learning About the Heart.

A third strategy that was utilized by the informants to minimize their uncertainty was learning about the heart. Most of the informants stated that they knew little about the heart, prior to their heart attacks. Many of the informants believed that an understanding of the heart enabled them to understand "what was happening" to them. Learning about the heart was considered extremely important as it made the event and the rehabilitation more manageable.

> I: Understanding what's happened is 90% of the battle. If you don't understand, you're going to be scared, hey....You're only scared of what you don't know. Even when I was a little wee kid and left alone in the house, if I heard sounds around, instead of hiding in the dark I'd open the bedroom window so that if there was something out there I could see it. Once I saw it, or saw there was nothing, the fear would go away. But as long as you stayed and hid in the dark from it, then you're scared 'cause anything could be there, right?...So, knowing what's happened is very important.

Information about the heart provided some of the informants with a sense of control. To understand "what was happening" gave them the control they needed to plan for the future and predict outcomes. As one informant stated, "I'm a person who wants to know exactly what is going on. I don't care whether it's good news or bad news. I just need to know intellectually what the hell is happening." An understanding of what a heart attack is enabled some of the informants to make sense of what remained unclear about their own condition. When asked what he thought about learning about the heart, one informant stated, "I think I've finally grasped enough that I will take a warning now. I won't let it get off my back." Another informant stated the following:

> I: I want to know the mechanisms that are going on; how the whole thing functions; the works. And, if I don't understand, then there are pieces missing in my mind, then I don't have any strategy for coping with it.

The importance that the strategy of learning about the heart held for the informants varied. While a need to understand what was happening was expressed by all of the informants, some believed that knowledge of the heart would not meet this need. This sentiment was expressed in the following statement in which an informant discussed how difficult it was to understand the arrhythmia she was experiencing:

> I: I just wonder why it does that. I would like to know. She explained all about how, you know, there's two parts to the beat and the top beat and the damage is all at the bottom so it should set up signals, a couple here and there where it's not supposed to be, but it doesn't really make sense to me....And I keep thinking, "What's wrong?" They don't really tell you what's wrong, just how it does it. And, there's a difference.

Many of the informants who felt that knowledge of the heart was not particularly helpful expressed a difficulty in relating to the abstract nature of the heart. Information about cardiac physiology and anatomy did not aid them in understanding what was happening to their particular hearts.

Many of the informants indicated that they wanted to know specifically what had happened to their hearts. Generalities about what caused heart attacks were not sufficient for these individuals. They wanted to know exactly "what the damage was." However, they discovered that health care professionals were unwilling to provide this information.

> I: I would like to know exactly what happened to my heart. It's important to know about it because then it's not so scary. I specifically, point blank asked them about it and they wouldn't tell me. They said it didn't matter. I don't know if it would do me any good, but I'd still like to know.

When asked why knowledge about her heart was so important, one informant stated, "I don't know. Just maybe it would change the way I feel about myself or something. Maybe it would help me understand what level I will be at."

Learning about the heart enabled the informants to understand what had happened. While, for some, this strategy enabled them to develop an understanding upon which decisions could be based, for others, information about the heart constituted a threat. This strategy was deemed useful only when the information received was believed to be helpful. Although information was important to all of the informants, the amount and type of information believed to be helpful differed.

Knowledge of the roles that diet, exercise, and rest play in the rehabilitation period was helpful to all of the informants. Many expressed a need to have clearer guidelines for what and what not to do. Information of this nature provided the informants with guidance about how to live their lives and served to minimize the uncertainty they were experiencing. They expressed a desire to have all the answers in "black and white."

Two of the informants indicated that, at times, knowledge about the heart served to make them increasingly anxious. They found that knowledge about the heart and the symptoms of heart disease sensitized them to the possibilities of what could "go wrong," rather than alleviate their uncertainties. One informant stated:

> I: The things that I would not even probably consider before or not even consciously be aware of, these little things inside, all of the sudden you are aware because it's brought to your attention....I think maybe the less you know, it's better for you.

These individuals tended to become preoccupied with the possibilities of their symptoms. For example, following a teaching session that focused on angina, one informant stated that she spent the next week worrying about whether she was experiencing angina. She stated that she became uncomfortably self-conscious as she feared that "every little twinge" was an angina attack.

Practicing Cautiousness.

The final strategy utilized by the informants to minimize uncertainty was the practice of cautiousness. This strategy was used to insure that they did not harm themselves by over-activity and was practiced when an informant was feeling vulnerable and "out of control." All of the informants expressed concerns regarding the possibility of "overdoing it." They were frightened that any form of over-exertion could potentially cause serious health problems. For example, many of the informants expressed a concern that over-exertion might lead to a second heart attack.

> I: Well, I'm scared of the angina, you know, because I did have it and I keep on thinking, "Will I have another heart attack?" So, I keep on thinking, "Well, if I do things slowly and get back into the swing of it slowly, I won't have one."

Although all of the informants believed that the way to prevent another heart attack was to avoid "overdoing it," the ways in which they practiced cautiousness varied. The degree to which an individual utilized the strategy of practicing cautiousness depended on the extent to which he or she felt in control. For example, informants believed that they did not have to be as cautious as usual in cardiac rehabilitation classes as health care professionals maintained vigilance for them, whereas they believed that they had to be extremely cautious when engaging in activities that had not been engaged in since the time of the heart attack.

Many of the informants expressed concern about the resumption of activities following their heart attacks. Although they did not want to over-exert themselves, they wanted to "push" themselves toward improvement. As one informant stated:

> I: So, you gotta go for as much as you can, but you can't overdo it....Like you don't want to think, "Oh, I can't do that." But, then you don't want to hurt yourself either, so you don't want to do anything to impede your getting well."

Although many of the informants felt that over-exertion was to be avoided, they also believed that they should not be "lazy." They found that decisions regarding an appropriate level of activity were difficult to make. They did not trust their abilities as judges and expressed concern that they might make wrong decisions. Rather than risk the possibility of hurting themselves, they chose to err on the side of cautiousness.

The practice of cautiousness as a strategy was a conscious effort. Some informants believed that if they did not practice some form of cautiousness, they would automatically "overdo things" out of habit.

> I: I was a little worried in myself that I would overdo it. In the hospital, quite unconsciously, I was moving a chair and I picked it up until I realized, "Oh, I shouldn't be doing this!" And you know, I put it down fast. I wasn't feeling too bad when I came home. I was a little scared that I might forget for a little while and then just plow into whatever I was doing.

Many of the informants described situations in which they reminded themselves to "take it easy."

All of the informants stated that, rather than engage in a task which could lead to a questionable outcome, they would choose not to do it. The informants avoided "taking any chances." In turn, this strategy ensured that the informants maintained control. For some of the informants, these decisions were not difficult to make. For others, every new task was approached with a sense of cautiousness. Some of the informants refused to engage in any activity until they had "checked" with their physicians or nurses. The fear of over-exertion had the potential to paralyze some of the informants. These individuals found themselves caught between a desire to "carry on as usual" and a fear that if they did they could hurt themselves and possibly die.

> I: I'm still going through it and I think, "Oh, I'm sure I can do this myself." And, "Why can't I do it?" I'm scared of overdoing it. I'm worried whether I should have a fear like that. I'm scared to do too much. And, what is frustrating is I think, "Well, should I do it or shouldn't I do it? Why do I have a fear of doing anything until I ask somebody if I can do it?"

For some informants, the decision to be "cautious" was difficult to live with. They remained fearful that they were not actively attempting to improve. These informants expressed a fear that they were malingering. They believed that they should be doing more and yet were afraid of the consequences of increasing their activity levels.

> I: I was scared that I was a baby. Even when I got home I thought, "Gee, am I babying myself? Can't I do this?" I was scared that I was babying myself and I kept on thinking, "Am I too afraid of what I've had?" I think I am, you know?

For some individuals, the fear of over-exertion and losing control rules their lives for many months. One informant refused to leave her home unaccompanied for fear that something would happen to her. When questioned about this she stated, "I thought, well, if I go out and something happens, I'd be so ashamed." For this informant, the strategy of practicing cautiousness was utilized to protect her self-esteem as well as her physical well being.

The only strategy that aided the informants in ridding themselves of their uncertainties was to practice some form of cautiousness. Some of the informants were able to harness the uncertainties they faced early on in the adjustment process. Others, who were unable to allay their fears, continued practicing cautiousness for many months following their heart attacks. This strategy was utilized until the individual was able to re-establish a sense of predictability and independence. As one informant stated, "I can't push myself. It's always at the back of my mind that I shouldn't push and I'm scared. I'm scared, you know, and it's been over three months."

Establishing Guidelines for Living

As the heart attack victim struggles with preserving a sense of self and minimizing uncertainty, he or she must face the challenge of establishing guidelines for living. Before these individuals are able to regain a sense of control, they must find ways to restructure their lives. The life of the heart attack victim is unalterably changed. Fear, uncertainty, and physical symptoms undermine one's sense of control. A heart attack disrupts plans and disorganizes the day-to-day structure of an individual's life. The heart attack victim is faced with the task of reordering his or her life. This objective is accomplished through the establishment of guidelines. Through the establishment of guidelines for living, a sense of control can be re-established.

Every individual requires some guidelines for living. Although these guidelines are not necessarily formal, they provide a sense of structure and control. In the absence of guidelines an individual would be faced with absolute uncertainty. Guidelines for living include an understanding of corporal limitations and an understanding of how one's life will be lived. The day-to-day functions of living are all performed within guidelines. Individuals usually attempt to avoid situations that will cause them harm. Guidelines for living provide a structure with which to make these judgements. The establishment of guidelines orders an individual's life and therefore enhances a sense of predictability, independence, and self-determination.

The informants in this investigation described three strategies that they utilized in order to establish guidelines for living. These included: testing their limitations, learning to read their bodies, and modifying their life-styles. The heart attack totally disrupted the plans and the rhythms of the informants' lives. All of these strategies were directed toward the re-establishment of control.

Testing Limitations.

As the informants became more confident in their abilities they began to test their limitations. Each new activity was approached with trepidation. The once normal routines of their lives were viewed as challenges. Initially, most of the informants faced new challenges with a sense of cautiousness. However, as they progressed in the adjustment process, they began to test their abilities. Whereas the informants practiced cautiousness in order to cognitively maintain a sense of control, they tested limitations in order to re-establish a sense of physical control and mastery. Many of the informants stated that they had to engage in each activity at least once, prior to their feeling comfortable with a particular activity.

> I: There was a bit of apprehension about driving.....So, you always want to see whether you can do it. That, I think, is the whole thing, "Can I do it?" If I do it once and it doesn't cause me any problem I can go back and do it again.

Driving a car, having sex, bowling, vacuuming, and going out were examples of challenges which had to be tested and overcome. As abilities were tested, the informants described a sense that their limits were being "stretched." As one informant stated:

> I: Like, I wouldn't do anything stupid. I wouldn't try anything that I knew I couldn't do or keep doing something that was beyond my limits. But, I think you can keep getting your limits, you can stretch them and you can keep stretching them until your limits go pretty far.

Many of the informants consciously attempted to challenge themselves as they believed this was the only way their limits could be overcome. To test their limitations in this way contributed to a sense of progress. It also reinforced the informants' perceptions of their abilities. Without this testing, many of the informants believed they would "stagnate." One informant stated:

> I: I've got to always say to myself, "Hey, I betcha I can do that and get away with it." You know, you have to and I'm doing it all the time. I think a lot of people do this. How in the heck do you know what you can do if you don't try?

The testing the informants engaged in was based on their perceptions of what they should be able to accomplish. In turn, this enabled them to gain a sense of confidence.

Some of the informants indicated that, at times, they believed they pushed "too hard" in their attempts to extend their limitations. Testing of this nature was conducted in order to "prove" their abilities to themselves and others. One informant described his rigorous testing of abilities in the following manner: "You go out and you push yourself sometimes when you shouldn't. You do this because it proves you can still do it and that you're not an invalid anymore." Those informants who tested their limitations and found that they were unable to meet their expectations were extremely disappointed. Often, they would be reluctant to resume testing until they had resolved the feelings they had about their apparent inabilities. To continue to test limitations, when the results were uncertain, was avoided as it held the potential for failure.

Testing of their abilities would continue until the informants were able to regain a sense of mastery and no longer required a conscious test of their abilities. Positive results of the testing of their limitations resulted in an affirmation of their abilities. Limitations which were initially perceived, were disproven in this manner. Those informants who initially believed that they would be faced with permanent disability were often able to prove to themselves that, through the testing of limitations, many of the restrictions they initially considered did not exist. This, in turn, prompted them to reconsider the possibilities for their future. Informants who began to disprove their restrictions returned to the stage of making sense of the event and began to evaluate their future in a positive manner.

> I: I thought it would be too hard, but now I don't think so. Before, like after I had the heart attack, I thought I might feel good again, but I didn't ever think really good. Like now I think I feel really good. And, I think I'll feel even better. Like, before I felt probably there would be some restriction in my life forever, but I don't think so anymore.

The testing of limitations enabled the informants to determine what they could and could not do. Many of the informants faced some form of restriction following their heart attacks. For example, they could not work as hard or as long as they once did, or they found that activities such as dancing or golfing were difficult. They believed that they needed to determine what their abilities were, for to know their limitations enabled them to learn when to say "no" and when to quit.

> I: You have to know your limits. If you go ahead and do things, certainly know your limits. If you are getting too exhausted, too tired, well just sit down. If you don't know your limits you may never do anything or you may overdo it.

The testing of limitations enabled the informants to regain a sense of predictability and independence. They learned how to pace themselves. These lessons were only learned through the trial and error of testing their limitations.

Learning to Read One's Body.

Closely related to the strategy of testing limitations is the strategy of learning to read one's body. Many of the informants believed that they were unable to trust their abilities following their heart attacks. They had difficulty determining how much activity was appropriate. In order to overcome this barrier, they were faced with the task of learning to trust their bodies' abilities. This was accomplished through the development of a sensitization to their bodies' needs and demands. Many of the informants indicated that they were out of touch with what was happening to their bodies. The fact that they had experienced a sudden and traumatic event served as proof of this failing.

Many of the informants stated that prior to their heart attack they would not respect the signs their bodies gave them to slow down. All of the informants reported that prior to their heart attacks they would drive themselves to complete tasks, despite symptoms of fatigue. The heart attack was an event which caused them to consider the fragility of their bodies. Many believed that they needed to be in "better touch" with what their bodies were telling them. This was a difficult task, as they had not previously considered their physical needs.

The major sign of over-exertion that the informants looked for was angina. It was difficult, at times, for the informants to learn about the symptoms that constitute angina. Many lived with a fear that they would experience angina and not recognize it. The subtlety of angina was extremely confusing. Many of the informants were not attuned to symptoms such as jaw pain, neck pain, and heart burn. If they had initially experienced angina in this manner, they were not immediately aware that the symptoms they were experiencing were related to their hearts. It often took several bouts of angina before the informants felt comfortable recognizing and treating it.

> I: You didn't know how you would know that the angina pain really comes and how it affects you. Like, even when I felt a certain pain I sort of discounted it, that maybe it wasn't an angina pain. But, it was, you see? It's difficult to adjust. It is an adjustment that you have to go through to realize what an angina pain is really like.

Those informants who did not experience angina following their heart attacks initially lived in fear that they would experience angina or not be able to recognize it if it occurred. As one informant stated, "You have maybe pains or whatever in your body and whatever sensations and you don't know what they are. Are they something to be concerned about or are they not?" Some individuals experienced a hypersensitivity to their bodies. Every sensation they experienced was carefully scrutinized. As time passed, these individuals began to believe that they would not experience angina. They were able to focus their attention on other aspects of their lives as they developed confidence in their abilities to read their bodies.

Informants also had to learn to be aware of symptoms such as fatigue and shortness of breath. An understanding of their bodies' needs and abilities provided the informants with a means by which they could measure their abilities.

> I: Occasionally, I was wondering whether I should or shouldn't do my gardening work. But, it seemed that I could trust my body to tell me that's enough for now and then I would quit.

Some of the informants in this study became extremely active in monitoring their abilities. They monitored their pulse rates and adjusted their medications to meet their needs. They developed a sensitivity to the changes they experienced in their bodies and, in turn, developed confidence in their abilities to read and control their symptoms. These particular informants indicated that they experienced a sense of control.

> I: It took me from the time I went home, at least three months, to run enough experiments on myself to figure out how to regulate my medicine, how to regulate my eating, how to regulate my other daily habits to where I have 99% of the time no problems of any kind. I never have angina or anything. If I want to have angina I can have it, but I've learned how to avoid it.

Their sensitivity to their bodies' abilities enabled the informants to develop a sense of trust. This provided them with a means by which they could make judgements regarding the continuation of an activity. One informant stated:

> I: You've got to know your warnings. There are things that if you do them and don't listen to the warnings you will overstep your bounds. The doctor puts certain limitations on you, but they're too general. You've got to figure out for yourself what your body can do.

The informants' abilities to read and trust their bodies were developed over time. This strategy was utilized in combination with the strategy of testing their limitations. Before limitations were tested, the informants required some means to judge the possible outcomes. The results of the limitation testing would, consequently, provide feedback about their abilities to read their bodies.

Modifying Life-style.

The final strategy that informants utilized to establish their guidelines for living was the modification of their life-styles. The modification of life-styles is not simply a strategy which involves making and implementing decisions regarding life-style changes. Rather, this strategy involves the serious consideration of life-style changes, attempts to implement and evaluate life-style changes, and, if the outcomes are positive, the incorporation of these changes into one's life. The strategy of making life-style modifications is complex. Not only do decisions about life-style have an impact on an individual, they also have an impact on one's family members.

Decisions regarding life-style modifications are structured by the way in which the individual "makes sense" of his or her heart attack. For example, one informant stated, "It was stress that caused my heart attack. I understand now what causes stress and I'm very conscious of the fact that stress can bring another problem back. So, I'm learning to avoid the situation that caused the stress." Those individuals, who did not experience the improvements which they expected as a result of their life-style modifications, returned to the task of making sense of the heart attack. Other causal explanations were sought and other life-style modifications attempted.

One informant believed that his heart attack was due to the stress he had experienced at work. Although he was 55 years old and had been informed that he would be able to return to work, he chose not to. He believed that returning to work would be returning to the problem that caused his heart attack. This informant reassessed his life goals as a result of his heart attack. Having been exposed to a life threatening event, he decided that he should attempt to live life to its fullest. He wanted to enjoy his life and spend time with his family. Whereas others might view his decision to retire as indicative of a rehabilitation failure, he indicated that his choice was motivated by something other than fear or a belief that he was crippled. He was motivated by the belief that only through retirement could his life be lived to its fullest.

All of the informants indicated that life-style changes should be gradual as a "total life adjustment" can not be implemented quickly. The changes considered particularly difficult were those that involved changes in attitude. One informant stated that it was impossible to change as he could not "reprogram his mind." The best he believed he could do was to modify his current life-style. The majority of the informants indicated that it was important they make the modifications to their life-styles gradually. It was also important that they believed in the changes they implemented. Those informants who attempted to "force" themselves to change, inevitably failed to sustain the changes. To attempt changes that they believed would not make a difference to their health would "set...[them] up for failure."

In this investigation, there were interesting contrasts between the ways in which the male and female informants made life-style modifications. The majority of men considered the modification of their life-styles to be a joint venture between themselves and their spouses. The male informants spoke of the changes in terms of "we." The older men, particularly, expected their wives to attend cardiac rehabilitation classes and learn to cook "for them." One informant stated, "[My wife's] entered the classes there and she is monitoring my diet and I think I've started to lose weight. Diet is her responsibility because I don't even know how to boil an egg. So, as I say, she's looking after that."

The women tended to make life-style changes independently. They did not involve their spouses to the same extent as the men. These differences were noted by the female informants. One informant stated:

> I: You know, [illegible] men I speak with at the classes...just assume that their wives will come along to the classes so they can learn to cook for them. But the women who've had heart attacks don't assume that their husbands will come along, you know. I never, I think once I saw a husband down there at one of the lectures.

The women in this investigation tended to take sole responsibility for their dietary changes. They were generally reluctant to make changes that might negatively affect their families. Many prided themselves in their ability to cook. They were unwilling to sacrifice their favourite recipes, which contained ingredients that were lacking in nutrition, particularly if their family members enjoyed eating them. Most attempted to modify their favourite recipes. However, this was not always successful. Family members often noticed the decreased saltiness of the cooking and the absence of fried foods and sweets. This, consequently, created a conflict. On the one hand, the women wanted to modify their life-styles. On the other hand, they did not want their family members to "suffer" because of them. Those who were able to resolve this conflict did so because they believed they were providing their families with "good" nutrition.

Generally, the life-style modifications that the female informants incorporated into their lives were done surreptitiously so as not to disrupt their families' routines. The women expressed concerns regarding the financial expense of making dietary changes and the time commitment involved in cardiac rehabilitation programs, whereas the men did not voice concerns of this nature.

Over the course of time, the informants began to view the modifications they had made as permanent. Life-style modifications had to be considered a part of the informants' lives before they were able to state that they had truly made modifications. Many believed that in order to incorporate these changes they had to be "tested" first. Testing involved being confronted with temptations and making selections that were consistent with their new life-styles. Settings in which this testing took place included the work setting, restaurants, and social gatherings. If the informants could sustain their new life-styles in the face of these "challenges," they believed they were "home free." One informant did not feel he would be "tested" until he returned to work. He had resolved not to take on every problem at work which came to his attention. He believed that the only way in which he would be able to evaluate his intention to decrease his work and stress was to actually witness how he would respond to an extremely stressful situation. Over the course of repeated "testing" the modifications that the informants made became a "part of living."

Stage Four: Living Again

As the informants struggled through the adjustment process they were often confronted with the fact that they were not living life to its fullest. All of their efforts, during the initial stages, were directed toward the re-establishment of control. Once a sense of control was re-established they were able to begin to live again. As one informant stated, "It takes a while to build up your confidence and then you basically have to start living all over again." This final stage of the adjustment process was entered gradually. As the informants regained a sense of control they began to refocus their attention on other aspects of life. The heart attack was no longer of primary concern. Although the informants never forgot that they had experienced a heart attack, as the final stage of the adjustment process was reached they were able to place the event "behind" them and allow other aspects of their lives to take precedence.

One informant described himself as a "car on the highway who's having the carbon blown out." Although this informant initially believed he would never improve, he was able to regain a sense of control in his life and resolve the limitations he faced. Most of the informants were unable to point out when they began to "get on with life." One informant suggested that she was living again by stating, "I feel like a whole person again. I know what I can do. I can do what everybody else does. I can do what I did before." There were three responses that characterized this stage: an acceptance of one's limitations, a refocusing on other concerns and issues, and an attainment of a sense of mastery. These three responses were the hallmarks of the final stage as they provide a strong indication that the individual is no longer struggling with the adjustment process. The following statement describes the essence of this final stage:

> I: You feel good in so many ways, you really do. Now I get the bicycle out and I just love it. I just get on that bicycle and go like hell. I go further and further all the time. And, I know the old heart won't quit on me. I don't even think about it.

Accepting Limitations

Many of the informants were faced with some form of limitation following their heart attack. Following a testing of their limitations, the informants were faced with the task of accepting the limitations that they were unable to change. This acceptance was often gradual. Some of the informants expressed an appreciation of the limitations that had been imposed upon them. New aspects of life were discovered as a result of being "forced" to slow down. One informant stated, "I don't push like I used to. If I feel I want to sit down and have a cup of tea that's what I do. And you know, I enjoy it!"

Often, the informants would change their expectations to incorporate their new limitations into their lives. By decreasing or changing their expectations, what were once considered limitations no longer existed. The informants accomplished this by re-examining their goals and expectations and by reconsidering their priorities. An example of this shifting of priorities is exemplified in the following statement:

> I: It used to annoy me for things to be messy, but I've learned to take things in my stride. I've had to let go of certain things. I've learned how to not let it bother me if the kitchen floor doesn't get washed. I've had to. Other things are more important.

Eventually, the limitations that the informants experienced were incorporated into their lives to such an extent that they were no longer considered limitations. Ultimately, they were considered a part of living. The limitations that were once perceived to be insurmountable were, thus, "taken in stride."

> I: I've finally realized that it is okay to curb some of my activities. I'm 64 years old and I've got to start slowing down. I'm still alert and very progressive, but I've got a physical requirement that is forcing me to slow down a bit and that's alright.

Many of the informants believed that once they had learned to "pace" themselves, limitations were no longer insurmountable. One informant stated, "You're always at a decided disadvantage compared to other people. However, it is a problem which I have learned to live with." This change in attitude afforded the informants a new sense of control. They began to believe that the task of living could be accomplished, perhaps more slowly, perhaps not in the same way as before, but nonetheless they could go on living. Thus, the uncertainties of the future were controlled.

Refocusing

As informants accepted their limitations they began to refocus their attention on other aspects of life. The heart attack was no longer the primary concern to be faced. This refocusing was due to the control that was re-established. As one informant stated, "The uncertainties are gradually fading away. I mean there will always be worries, but just not so pronounced." Much of the refocusing was enhanced by the passage of time. As months passed the perceived severity of the heart attack diminished.

> I: You're feeling great. You can do these things. You're confident of yourself and so it doesn't seem there are things to be uncertain about. It takes time! It doesn't matter what anybody preaches at you.
>
> I: I think the farther down the road you get with your own rehabilitation the easier it gets to take. Things concern you less. You are able to put things in perspective. Basically, I've learned to put what's happened behind me.

The refocusing was enhanced by the informants' physical improvements. Physical limitations, such as weakness and fatigue, diminished over time. A sense of physical improvement enhanced the informants' sense of control and allowed them the freedom to address other concerns in their lives. One informant described this freedom to address other concerns in the following manner: "You know if you feel good there is nothing nagging at your brain. Then your whole outlook is better. You can feel a little more daring as time goes on."

The third factor that enabled the informants to refocus their attention on other aspects of their lives was their will to live. Many of the informants described dreams and goals that they had yet to fulfill. They were determined to avoid allowing their lives to be consumed by their heart attacks. They described a desire to live life to its fullest. In some cases, this desire was enhanced by the experience of a close brush with death. Those informants who had made resolves to "live life differently," in the initial stages of the adjustment process, were often driven by this resolution. In one situation, this desire to live differently prompted the informant to focus his energy on things and individuals other than himself. This informant described his outlook:

> I: Oh, my outlook on life has certainly changed. I try and appreciate other people now. I try and look at them and appreciate their concerns; put them first before me....Sometimes I was pretty headstrong in my own selfish ways, but now I just look at people a little differently with maybe a little bit more love than I did in the past.

Despite this informant's attempt to focus on others, rather than himself, his desire was initially thwarted because he had not fully adjusted to his loss of control. He later found in the adjustment process that he was unable to sustain his attempts to care for others. He discovered that he had to spend time and effort caring for himself before he could effectively redirect his concern toward others.

Attaining Mastery

The final response, which was indicative of the successful attainment of the final stage of the adjustment process, was a sense of mastery. Mastery involves an effortless ability to complete tasks without consideration; it is not a self-conscious response. The informants acquired a sense of mastery over time and described this response in terms of the feelings it provoked. The feelings that this sense of mastery provoked included: "satisfaction," "feelings of accomplishment," "strength," and "pride."

With a sense of mastery, the informants were able to carry out the tasks of their everyday lives without effort. Rather than consider every activity, the selection of tasks was made without conscious effort; a sense of predictability was restored. One informant described attaining a sense of mastery in the following manner:

> I: I feel like I've got over the hurdle. I'm able to do things. It gives me a good feeling. The cautiousness is going away. I run up and down the stairs now without even thinking about it. I never used to do that.

Often, a sense of mastery caught the informants unaware. Upon reviewing their progress, they were able to point out that they were indeed developing confidence and an ever increasing sense of control. With this increasing sense of mastery, the informants found they needed fewer supports and no longer required constant reassurance. They had the ability to make decisions about activities and judge their progress and they knew this. They were confident of their abilities.

> I: At the beginning you don't know what to do. You don't know how far you should go on your own. And, then, after a while, you need less help and basically you don't want anymore help. You feel more freedom without knowing it. You know you are okay. You get a little more space

> to expand. Your limits broaden out and you feel comfortable with yourself.

Some of the informants were able to describe moments in time in which they knew they had regained a sense of control in their lives. Certain events were of great significance as they provided strong indicators of their abilities. These accomplishments included activities such as the first time one informant entertained, the efforts one informant made to move boxes, and the completion of a hike up a mountain for another informant.

> I: I'll tell you one of my happiest times was the summer after I had my heart attack....We went to Banff, to Johnson Canyon...and we walked up the mountain there for hours. But, I walked careful. I walked easy because I hadn't had my heart attack all that long ago. And, I get to about four miles up there, hey, I felt great and I thought God I'm not a cripple! The last thing you want to be is a cripple, hey. Nobody wants to be. A blind person doesn't want to be blind and a deaf person doesn't want to be deaf and a person with a heart attack doesn't want to be a couch potato.

Abandoning the Struggle

There are those individuals who are unable to successfully adjust following a heart attack. Those individuals, who are perpetually caught in the cycle of coming to terms and learning to live, may at times find it necessary to abandon the struggle to re-establish control. The individuals who are most likely to abandon the struggle are those who believe that they have experienced "too many" set backs and believe that the fight to regain control is "hopeless." Heart attack victims are extremely vulnerable to the influence of others. Their assessments of their improvements are not always accurate. At times, individuals can exit from the adjustment process because of a perceived inability to re-establish control. Although somewhat contradictory, the decision to abandon the fight is perceived to be the only means by which some semblance of control can be regained. Those individuals, who abandon the struggle believe that there is nothing more they can do. Responsibility for the heart attack is surrendered and the heart problems, which they continue to experience, are deemed to be the responsibility of health care providers.

In this investigation there was one informant who abandoned the fight to regain control. She experienced numerous set backs in the adjustment process. She was constantly setting goals and failing to meet them. Eventually, she was no longer able to face perpetual disappointment. She ceased to set goals, refused to monitor her progress, and abandoned attempts to read her body. Her sense of loss repeatedly outweighed any sense of gains. She described her situation in this way:

> I: It's the doctor's problem. There's nothing I can do about it. Somebody else has got to fix it. I can't. I did all I can. I changed my diet. I quit smoking. I do my exercise....There's no more I can do.

Although there was only one informant in this investigation who abandoned the fight to regain control, the other informants expressed a belief that they too would "give up" if they had no sign of progress, only repeated disappointments. In fact, two other informants exhibited signs of abandoning the fight. However, their situations improved and they were able to re-engage in the adjustment process. Although the informant who abandoned the fight was by no means the most ill of the informants, she believed that she would not improve. She found that health care professionals working with her provided little sense of hope. When she believed she was doing well she perceived a response from health care professionals that she was not. She was unable to establish a sense of control over the adjustment process. All attempts to regain control failed. Consequently, in order to maintain some semblance of control, she ceased to try. Interviews with this informant spanned a period of six months. At the time of the last interview she had indicated that she had "given up." However, it is possible that factors may present themselves which would allow this informant the opportunity to re-enter the adjustment process.

The Process of Adjustment

The adjustment that individuals experience following a heart attack is a variable process which incorporates four emergent stages. Each of these stages is characterized by particular strategies and responses. The ways in which individuals respond to the various stages and the strategies they employ may vary. Despite this variation, all of the strategies and responses which characterize the adjustment process are directed toward regaining a sense of control. As the core category incorporates four emergent stages, it may be termed a Basic Social Process (BSP). Glaser (1978) stated that "...a BSP processes a social or social psychological problem from the point of view of continuing social organization" (p. 97). The BSP, regaining control, uncovers the conditions that give rise to the particular variation in the adjustment process.

The preponderance of variation in the adjustment process was found in the second and third stages of the adjustment process. These two stages were found to be highly interrelated. Whereas some informants were able to progress smoothly through the adjustment process from stage to stage, others remained in a cycle of making sense of the event and learning to live for an extended period of time. The adjustment process is diagrammatically represented in Figure 7. Those individuals who are able to establish and maintain a "positive attitude" move quickly through the adjustment process. Those individuals who have difficulty establishing or who are unable to maintain a "positive attitude" may return several times to the stage of making sense of the event.

The reflexive nature of the second and third stages of the adjustment process was difficult to uncover. The variation, initially described by the informants, produced a confusing picture. Not only was there variation among the informants, but the informants themselves "changed" their minds and their attitudes over the course of time. It was the identification of the core category that enabled the investigator to determine the nature of this considerable variation. It was found that all of the responses and strategies, which the informants discussed, were directed toward the achievement of control. The informants made sense of their situations in order to regain control and it was this understanding that guided their subsequent responses and selections of strategies. The reflexive nature of the adjustment process was captured by the following statement:

> I: You change your mind so many times during the healing process. Like you think about the way your life is going and what you can do. I know at one point I thought I would never be able to work again. I was sure I couldn't. One day you think you can't do anything. So you don't. The

> next you think you have the world by the tail. It seems like such a changing process.

All of the informants in this investigation addressed the different "styles" of coping they utilized and witnessed. The importance of developing a "comfortable style" was emphasized by many. Certainly, the "styles" of adjustment that individuals utilize differ. However, all of the informants directed their efforts of adjustment toward the process of regaining control.

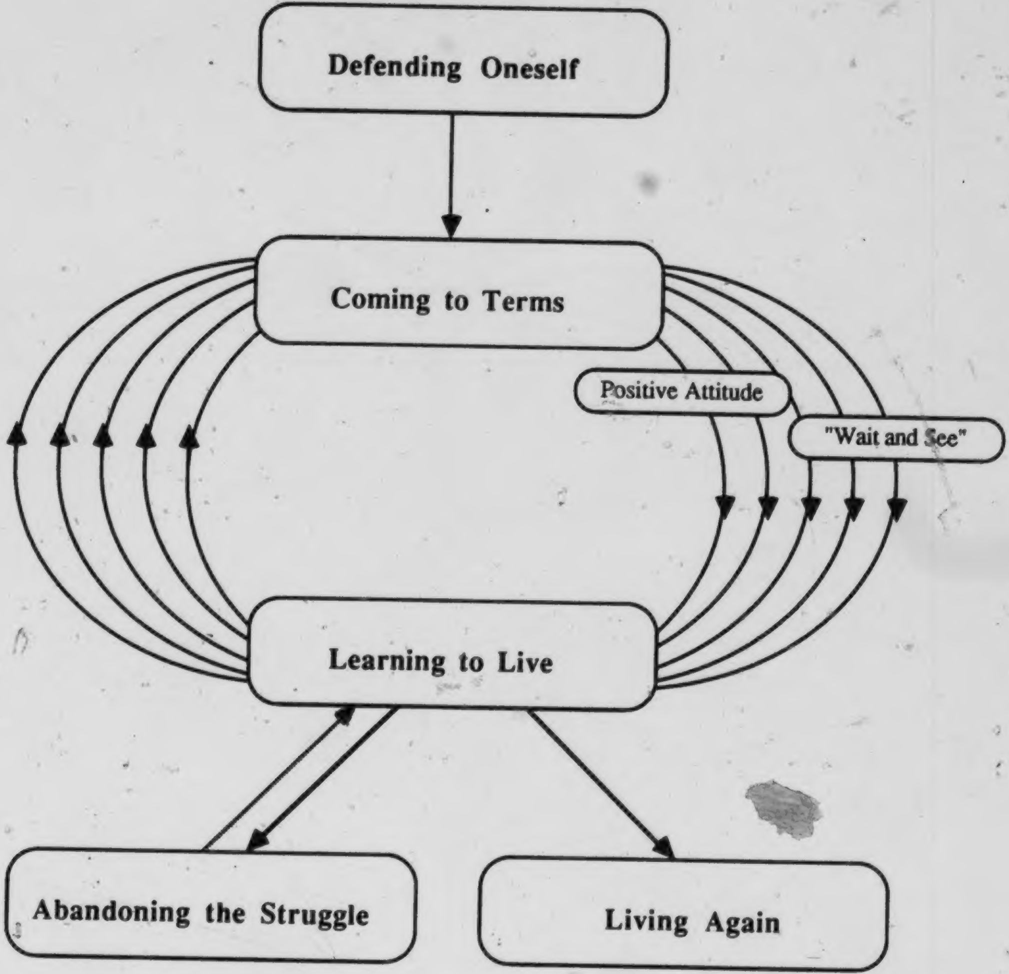

Figure 7. The Process of Adjustment Following Heart Attack.

VI. DISCUSSION

The purpose of this study was to examine the process of adjustment which individuals experience following MI. An inductive approach was utilized as an analysis of existing research on the experiences of MI patients revealed a confusing and incomplete understanding of the adjustment process. The findings of this study indicate that the process of adjustment is comprised of four interrelated stages: defending one's self, coming to terms with the event, learning to live, and living again. All of the strategies and responses that characterize each of the four stages are directed toward regaining a sense of control. The regaining of control is a Basic Social Process (BSP) which accounts for the variation in the adjustment process.

In the following chapter three aspects of this study will be discussed. First, the findings of this study will be discussed in light of the extant research findings that pertain to the adjustment process that individuals experience following MI. As the literature that pertains specifically to the process of recovery experienced by the MI patient is sparse, literature will be drawn from other fields of inquiry. Throughout this discussion implications for nursing practice and further research will be discussed. Second, the research methods utilized in this study will be discussed. Finally, the findings will be summarized.

Discussion of Findings

Regaining Control

The BSP of regaining a sense of personal control is central to the process of adjustment following MI in that the successful resolution of the adjustment process is contingent upon the individual's ability to regain a sense of control. In this study it was found that this process involves three dimensions: regaining a sense of predictability, of independence, and of self-determination. A growing body of literature supports the idea that perceptions of control facilitate an individual's ability to cope with difficult, distressing, or frightening situations (Diamond & Jones, 1983). An understanding of the role that control plays in the coping abilities of individuals has not, to date, been explored among victims of MI. The research literature that generally addresses the issue of control presents a confusing picture as the many conceptual definitions of control, which have been utilized, vary widely. Investigators have attempted to understand an individual's abilities to maintain and regain a sense of control by utilizing a variety of conceptual perspectives. Concepts such as locus of control (Rotter, 1966), self-efficacy (Bandura, 1977), competence (Moos & Tsu, 1976), powerlessness (Seeman, 1959), hopelessness (Beck, Weissman, Lester, & Trexler, 1974), and learned helplessness (Seligman, 1975) have emerged as possible explanations of the role that control plays in situations of difficulty. Rather than discuss each of these concepts in their entirety, they will be discussed in relation to the dimensions of control that emerged in this investigation.

Predictability.

Predictability refers to the ability to utilize past experiences to foretell the immediate future and involves a perception that responses made will have some impact on life's outcomes. The sudden nature of an MI constitutes a crisis which disturbs the rhythm of an individual's life. Consequently, the future is perceived to be uncertain and the individual is unable to trust his or her abilities. During the course of the recovery process the individual must struggle to regain a sense of predictability.

Several investigators' works pertain to the concept of predictability. Bandura (1977) postulated that outcome expectancies, an individual's ability to estimate that a given behaviour will lead to certain outcomes, affect the coping behaviours that an individual utilizes in a stressful situation. Those individuals who believe that they will not achieve a desired outcome will cease to exert any effort. In a similar manner, White (1959) described personal control in terms of competence. He theorized that competent human beings experience the power of initiative and a sense of being the causal agent in their own lives.

The crisis of an MI can be seen to precipitate a sense of loss of control and in turn undermine this sense of competence. In examining loss of control Seeman (1959) defined powerlessness as the expectancy held by the individual that his or her behaviour cannot affect the outcome that he or she seeks. Similarly, learned helplessness refers to an inability to respond instrumentally after experiencing inescapable aversive events in which instrumental behaviour had no affect on the outcome (Seligman, 1975). Several conceptual variations on helplessness have appeared in the literature. One variation is the concept of hopelessness, a state in which an individual fails to make any effort to change her or his life circumstances (Beck et al., 1974). All of these conceptualizations of personal control support the notion that a sense of predictability, being a causal agent in one's life, is a necessary aspect of control.

At issue in much of the research literature that deals with aspects of personal control is the question of whether the critical factor is control, as such, or predictability. The research literature is replete with competing theories of personal control. The findings of this investigation suggest that predictability is not synonymous with a sense of personal control, but rather a necessary dimension of control. Equally important to the informant's sense of personal control were the dimensions of self-determination and independence. Control over the occurrence of the MI *per se* was not viewed as an achievable goal by the informants in this investigation. However, the ability to plan strategies to manage difficulties and to predict outcomes were viewed as the means by which control could be regained. In this sense, predictability cannot be viewed as synonymous with control, rather it is a dimension of control, the achievement of which enhances a sense of personal control.

Self-determination.

The MI victim is immediately stripped of a sense of self-determination the moment he or she is admitted to a hospital. He or she is robbed of decisional power and is "told" what to do and how to do it. Responsibility for the patient's well-being is assumed by members of the health care team. The MI patient cannot regain a sense of personal control until a sense of self-determination is regained. Self-determination, as it was conceptualized in this investigation, involves decisional control; the power to understand what is happening and to make autonomous decisions. Just as loss of predictability in one's life undermines an individual's sense of control, so too does a loss of self-determination.

An essential element in the re-establishment of self-determination is an adequate knowledge base. The individuals in this investigation believed that they knew little about cardiac disease and, more specifically, how cardiac disease could affect them personally. It has long been recognized that MI patients require extensive education (Hentinen, 1986; Wilson-Barnett, 1979). However, two questions continue to be raised in the literature: What is the specific purpose of education? and what should be included in educational programs? This investigator found that the importance that education had for the informants was related to the extent to which it contributed toward their sense of self-determination. Information that did not fulfill this need was either disregarded or served only to increase the informants' sense of loss of control.

The efficacy of education programs for cardiac patients has been the subject of numerous investigations (Fletcher, V., 1987; Gerard & Peterson, 1984; Horlick et al., 1984; Karlik & Yarcheski, 1987; Raleigh & Odtohan, 1987; Tirrell & Hart, 1980; Winslow, 1976). The majority of these investigations have either surveyed the informational needs of cardiac patients or evaluated the retention of information. The extent to which education contributes to an MI patient's sense of well-being has been largely ignored. Information alone does not constitute a knowledge base upon which the MI patient can make competent decisions autonomously, rather, information must be incorporated into the MI patient's life. Without this incorporation, the information received is worthless.

One aspect of knowledge, which, to date, has not been investigated, is the personal knowledge that individuals acquire through the testing of their limitations post-MI. It was primarily through testing of this nature that the informants in this investigation acquired a sense of self-determination and ultimately control. Rather than focus on an individual's ability to adjust following MI, investigators have tended to focus on the ways in which one can retain control of the adjustment process through the management of resources. In a recent investigation, which focused on the experience of individuals involved in rehabilitation programs, Ben-Sira (1983, 1986) found that the greater an individual's control of resources, the better were his or her chances of successful coping. Furthermore, he found that dependency on rehabilitation agencies was detrimental to successful readjustment. There is an apparent conflict between the professional role in controlling resources and the patient's need to establish control. This is further substantiated by the work of Janis and Rodin (1979) who described situations in which health professionals held strong ideas about the effectiveness of treatment regimens and sometimes, in their zeal to influence clients, overemphasized the "shoulds" and "musts." This situation can lead to what Brehm (1966) termed "reactance." This response occurs when individuals who perceive that their choices are limited become motivated to restore their lost freedom. Undoubtedly, MI patients require information. However, they also require support to test their own limitations and to learn through testing how to regain a sense of self-determination. Control of the adjustment process cannot, therefore, rest solely with health care professionals.

Independence.

The third dimension of control as conceptualized in this investigation is independence. Independence involves the ability to act on decisions made and is, therefore, closely linked to self-determination. Prior to the event of MI, the individual believes that he or she has control over his or her body. The event of MI usurps this control, leaving the individual dependent on others for physical and psychological support. Although all individuals require the support of others, the MI victim's dependence is magnified to such a degree that she or he initially requires assistance or support for practically all activities. Perceived health status and its change during the adjustment process is a pivotal variable in the re-establishment of independence. Physical symptoms, fears, anxieties, and the perception of being a cardiac invalid can all undermine an individual's sense of independence. In addition, the actions of others, particularly overprotective behaviour, can undermine one's sense of independence.

Whereas some investigators argue that cognitive control is analogous to behavioural control, the findings of this investigation indicate that self-determination and independence are distinct entities. The belief that an individual should engage in a certain behaviour (self-determination) was found to differ from the ability to sustain and perform certain behaviours. For example, although some individuals could perform certain behaviours independently, they remained unsure as to the advisability of performing them. On the other hand, some individuals believed that they should perform certain behaviours but felt incapable of doing so independently. Bandura's (1977) work on self-efficacy supports the conceptualization of independence as a distinct dimension of personal control. Bandura postulated that expectations of personal efficacy determine whether coping behaviours will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences. In other words, if an individual believes that certain behaviours will result in certain outcomes but does not believe that he or she can perform the required activity, his or her behaviour will not be influenced. The greater the self-efficacy the more the individual will put forth to achieve an outcome. Averill (1973) also made distinctions between behavioural control (taking direct action) and decisional control (the capacity to make choices between alternatives). Accordingly, the distinction between self-control and independence is further supported.

The conceptualization of control as consisting of three dimensions may provide a useful means for examining and assessing the progress that individuals make in the adjustment process following MI. Indices of improvement in the adjustment process have been lacking in the field of cardiac rehabilitation. Goals such as return to work do not necessarily reflect the goals of the MI patient. As health care professionals are continually challenged to demonstrate the value of their interventions, the need for valid and reliable indices of improvement are in great demand. Further research in this area may provide a more solid understanding of the role that control plays in the adjustment process.

The Adjustment Process

The four stages of the adjustment process as outlined in this study have not been previously described. In the following section the findings of the study will be contrasted with the extant literature.

Defending Oneself.

The first stage of the adjustment process involves a struggle on the part of the MI victim to maintain a sense of control. The three strategies that are utilized in this stage have been described to some extent in other investigations. Behaviours comparable to the normalizing of symptoms were reported by Cowie (1976) and Levy (1981). Mechanic (1962) listed four factors that may prompt an individual to perceive he or she is ill. The first two factors, commonality and familiarity of symptoms, were referred to as illness recognition. The other two factors, predictability of outcome and threat from the illness, were referred to as illness danger. This framework provides valuable insight into the decisions of the cardiac patient to seek assistance. The MI victim can easily attribute the symptoms she or he experiences to benign conditions, such as the "flu," and thereby view the symptoms as common and familiar and thus not seek assistance. Even when symptoms are perceived as uncommon, the threat to one's independence often outweighs the perceived threat of physical danger. These factors prompt the MI victim to persist in attempts to normalize the symptoms.

It is estimated that over one-half of deaths following MI occur prior to hospitalization (Doerhman, 1977). Despite these dramatic statistics, the delay in hospital arrival time has not been investigated in any detail. The persistence with which the MI victim continues to normalize symptoms may partially account for high mortality rates. Informants in this investigation were ill informed about the signs and symptoms of MI. This factor, coupled with an unwillingness to relinquish control, were found to be the major obstacles in the decision to seek assistance. Clearly, more effort is required to inform the public about the symptoms of MI and to warn of the dangers of delaying treatment.

The second strategy utilized by MI patients in their struggle to maintain a sense of control involves the maintenance of the *status quo*. Apple (1960) found that "laymen" interpret something as a symptom depending on its recency and the degree to which it interferes with everyday activities. Similarly, the informants in this study struggled to continue on with their everyday lives. This strategy continued until their symptoms exacerbated to such a degree that they were no longer able to continue. Levy's (1981) research also recognized the utilization of this strategy. The informants she interviewed expressed a "dogged sense of determination in their attempts to 'carry on as usual'" (p. 160). Unfortunately, this tendency to maintain the *status quo* until forced to alter one's perception of the situation could prove fatal.

MI victims continue to maintain the *status quo* until their symptoms become overwhelming or their family or friends force them to seek assistance. This finding is comparable to the work of Dingwall (1976) who suggested that the interpretive work completed by the sufferer and the interpretive work completed by significant others provide the two major pathways through which professional assistance is sought. Dingwall defined illness as a perceptual interpretive process. If an individual's problem falls outside his or her knowledge and capacities for remedial action, then he or she is likely to turn to trusted problem-solvers. Similarly, the MI victims in this investigation continued to normalize and treat their symptoms until all courses of remedial action were exhausted. It is unclear if intervention could, in fact, assist in shortening this interpretive cycle. Certainly, more research is warranted in this area if pre-hospital mortality is to be decreased.

A distancing of oneself is the third strategy that MI victims utilize in their struggle to maintain control. Rather than engage in the threatening reality of the hospital experience, the MI victim remains disconnected from events. This distance provides the victim, who is ill prepared to face reality, with a buffer. This strategy has not been discussed in the literature, rather investigators have tended to focus on the coping strategy of denial. Denial has been traditionally viewed as a maladaptive coping response. Although some investigators have reported the positive effects of denial (Cassem & Hackett, 1977; Levine et al., 1987) the assumption that the denial of reality is abnormal and even "sick" continues to pervade the literature. By abandoning the label of denial, which focuses on a behaviour rather than the cause or function of the behaviour, the MI patient's experience can be considered in a new light. Whereas the term "denial" implies that the individual "knows" the truth and is somehow ignoring or distorting it, the term "distancing" implies that the individual has not yet been able to approach or understand the truth.

MI patients distance themselves from the severity of their diagnosis, the hospital experience, and the threat of death as they are unprepared to process and accept their new circumstances. The process of distancing oneself can be manifested in many forms including: experiencing the circumstances of hospitalization as a "fog," refusing to believe the veracity of the diagnosis, and, in some circumstances, having an out-of-body experience. All of these forms of distancing serve to protect the victim from the pain and horror of the MI experience.

Interpretation of the out-of-body experience depends, in part, upon the model used to conceptualize it. In attempting to understand the experience, models have been applied from mystical/religious perspectives (Castaneda, 1971; Krishna, 1971), parapsychological theories (Rogo, 1983), psychological (Blackmore, 1984), and physiological (Lindley, Bryan, & Conley, 1981) perspectives. The majority of psychological models of the out-of-body experience postulate that this experience is reflective of such psychopathological processes as hallucinations, delusions, dissociation, or ego splitting (Tobacyk & Mitchell, 1987). The potential that an out-of-body experience may have for distancing an individual from a painful or frightening experience has not been the subject of investigation. The informants in this investigation who described out-of-body experiences believed that this experience enabled them to escape from excruciating pain and frightening circumstances. Framed within this context the out-of-body experience can be conceptualized as an extreme form of distancing. The adaptive function of the out-of-body experience certainly warrants further investigation.

Coming to Terms.

In the second stage of the adjustment process the MI victim must struggle to come to terms with the event of the MI. Included in the process of coming to terms are four phases: facing one's mortality, making sense, facing limitations, and, finally, developing an attitude toward the future. The life threatening nature of an MI has a profound effect on the outlook of the MI victim. The way in which this experience is viewed, in turn, influences the remainder of the adjustment process.

Many individuals have never contemplated their mortality prior to the experience of an MI. The MI serves as an inescapable reminder that life is not an unending experience. Inevitably this experience transforms the way the MI victim views the world. For some individuals this experience invokes a belief that life should be cherished, while for others it enforces a fear that their lives will be cut short. This fear of death can prove to be an obstacle in the process of adjustment as all activities are viewed as potentially lethal. The work of Raft and Anderson (1986) confirms the notion that near death experiences can either engender emotional difficulties or create a self-understanding that can be used to the survivor's benefit. These investigators reported that some survivors of serious illness may experience an increased vitality, a greater tolerance of others, and an increased receptivity to new ideas while others become increasingly self-absorbed and bitter. In this investigation many of the informants were initially reluctant to discuss their views regarding the life threatening nature of their MIs. Once elicited, this information helped explain the informants' attitudes toward their adjustment. The role that an individual's perceptions play in the adjustment process cannot be stressed enough. Health professionals must remain cognizant of this factor when dealing with MI patients. Perception checks and detailed interviews are some of the strategies that professionals can use in their attempts to remain "in touch" with the perceptions of the MI patient.

In addition to facing their own mortality, MI victims must in some way make sense of what has occurred to them. Attempts to make sense of the event of MI is motivated by the need to understand why the crisis occurred. By creating a causal explanation, a sense of predictability is restored. The event of MI is, thereby, "fit" into the scheme of the victim's life. Attribution theory (Heider, 1958) supports this finding, as it posits that following a threatening or dramatic event, individuals will make causal attributions so as to understand, predict, and control their environments. All of the informants in this study attempted to engage in retrospective reconstructions of their biographies. Their biographies were usually reconstructed in such a way that their MIs were perceived as the obvious outcome of their previous life-styles. It would seem that blaming oneself is more tolerable than the conclusion that no one is to blame, and/or that the individual is living in a meaningless, chaotic world where events occur at random (Wortman, 1983). As Taylor (1983) suggested, placing an event in a reconstructed historical context can make it easier to accept and can reduce the surprise element. In addition, the identification of causal attributions enables the MI patient to determine what factors might be altered and changed, thereby reducing the possibility of future MIs. In this sense, attributing the cause of the MI to some aspect of one's behaviour may be quite adaptive. This attribution provides the individual with some hope, namely, if one can change one's behaviour such outcomes can be prevented in the future. This hypothesis is supported by the fact that informants who experienced difficulty identifying causal explanations continued to feel victimized and experienced difficulty making and committing themselves to life-style changes.

Despite the fact that the epidemiology of MI is not well understood, certain risk factors have been identified by researchers. The contribution that these risk factors make to the onset of MI is not well understood. Despite this fact, the management of risk factors is the focus of cardiac rehabilitation programs. A review of risk factors provides the MI victim with a structure for making causal attributions. While some individuals find this process helpful, others feel victimized. Many informants indicated that they "deserved" their MIs, while others expressed feelings of guilt or having done something wrong. The term "stigma" is now ordinarily used in a broad sense to refer to the disgrace associated with certain conditions, attributes, traits, or forms of behaviour (Fitzpatrick, Hinton, Newman, Scambler, & Thompson, 1984). It would seem that, in our increasingly "health conscious" society, heart disease has become a stigmatized condition.

The media's role in identifying the ill effects of poor nutrition, lack of exercise, and smoking and encouraging self-responsibility inevitably contributes to the belief that the MI victim is personally liable (Labonte & Penfold, 1981). All of the informants in this study believed that MI was a disease of life-style. As Allison (1982) pointed out, the term "disease of life-style" is used in conjunction with the concept "disease of choice." Clearly, there is a vast amount of implicit guilt projected by this message.

While attributing causal explanations to one's behavior may in some ways constitute an adaptive response, one must question the blame our health care system imposes on victims of MI. Issues of "blaming the victim" have recently been raised in the health care literature (Allison, 1982; Labonte & Penfold, 1981; Wickler, 1987; Wortman, 1983). The fact that informants in this investigation expressed feelings of guilt and shame for having experienced an MI raises serious questions about the implicit messages individuals receive from the media and health care professionals. The role that victim-blaming plays in the adjustment of MI patients has not, to date, been addressed in the cardiac rehabilitation literature. One must question if MI victims are unduly stressed by the assumption that they are to blame for their cardiac disease. The potential benefits of the adaptive response of seeking causal explanations must be carefully weighed against the deleterious effects of assigning blame to the victim. Clearly, this issue warrants further investigation.

Another phase of coming to terms is composed of facing the limitations that an MI creates. Often, the limitations that the MI victim perceives remain concealed. The weakness and fatigue the victim experiences serve to confirm one's fears that she or he has experienced an unalterable change. Fears that an MI patient might harbour have not been investigated in any detail. Although the grieving of potential losses may play a necessary role in the adjustment process, health professionals, particularly nurses, can play a vital role in eliciting these fears and assisting the MI victim to come to terms with them.

The ability of the MI victim to deal with the first three phases of coming to terms, affects the outcome of the fourth and final phase, developing an attitude toward the future. In turn, the attitude that the MI victim develops toward the future influences the coping strategies utilized in the remainder of the adjustment process. The informants in this study can be divided into two groups: those who held a positive attitude toward the future and those who believed they must "wait and see" what the future might hold. Although the informants believed that it was important to maintain a positive attitude, not all were initially able to adopt this attitude. Fear of death and disability, a perception that limitations were insurmountable, and an inability to make sense of the MI were the major impediments to the development of a positive attitude. These findings are supported by the work of Levy (1981) who reported that MI patients who failed at retrospective reconstruction had a tendency to be vague about future motives and behavioural intentions to cope with a given situation.

Although it has been pointed out that the success of rehabilitation following MI largely depends on how patients adapt psychologically to a change in health (Cassem & Hackett, 1977; Meagher, 1987), the mechanism by which some individuals readily adapt and others do not is not fully understood. The factors which affect the development of an attitude toward the future (see Figure 3, p. 55) provide a beginning understanding of this mechanism. It would seem reasonable to devote future research to an understanding of the impediments to the development of a positive attitude post-MI and developing interventions to assist the MI victim in attaining a positive attitude. The work of Strauss et al. (1984), which pertains to the shaping of illness trajectories, could provide a valuable framework for investigations of this nature.

Learning to Live.

The third stage of the adjustment process focuses on the process of learning to live again. An MI disrupts an individual's sense of control to such a degree that he or she must learn once again to trust his or her abilities and re-establish a comfortable and satisfying life-style. This process involves three phases: preserving a sense of self, minimizing uncertainty, and establishing guidelines for living.

A person's identity is that experience which he or she regards as essentially "me." One develops a conceptualization of oneself and labels the experience of existing (Gergen, 1971). The experience of MI undermines one's sense of self. In order to maintain a unique sense of identity, other than "patient" or "invalid," the MI patient must engage in a struggle to preserve a sense of self. Two strategies are utilized in this struggle: managing role transitions and balancing needs and supports.

It is in the management of role transitions that the greatest variation in male and female experiences was noted. Parsons' (1951) original work on the sick role posited that the sick role consisted of four characteristics: (a) the sick person is exempt from social responsibility; (b) the sick person cannot be expected to care for him or herself; (c) the sick person should want to get well, and finally (d) the sick person should seek medical advice and cooperate with medical experts. Although Parsons' work has been the subject of numerous critical assessments, it is frequently utilized as a basis for understanding the patient experience (Diamond & Jones, 1983; Gordon, 1966). The findings of this study suggest that there are several factors that inhibit the MI victim from adapting and sustaining the sick role. In the case of women, difficulty is experienced in relinquishing their caring roles and receiving care. Fugate Woods (1987) suggested that caring relationships are central to women's identity. Despite the fact that women are employed outside the home in increasing numbers, they remain primarily responsible for the care giving activities in the home (Killien & Brown, 1987). Perhaps this fact explains why wives have been included in numerous investigations that focus on the ways in which women can support their husbands post-MI, while the roles which husbands can play in supporting their wives post-MI have been virtually ignored. The findings of this investigation suggest that the sick role is in conflict with a woman's caring role and, as a result of this conflict, women resume activities at a greater pace than men. Women, it would appear, are never exempt from the social responsibility of providing care for their families.

A second factor that prompted the women of this study to prematurely resume their household activities was the perception that household activities do not constitute work. The devaluation of housework by women and society at large inevitably contributes to this belief. Although male dominance is no longer an explicit ideal of North American culture, our society continues to have very definite ideas regarding sex-appropriate behaviour. As Lowe (1983) pointed out, in spite of the entry of large numbers of women into the wage labor force and the changes brought about by the women's movement, "masculine" and "feminine" behaviour remain highly stereotyped. These stereotypes have far-reaching effects as ideas about appropriate behaviour for for men and women can act as powerful constraints on how people behave. Rosenberg (1987) argued that defining mothering as work is crucial to the understanding and treatment of post-partum depression. Considering the findings of this study one might argue that a similar approach may be necessary for all women who are adjusting to situational and maturational crises.

The findings of this study indicate that Parsons' (1951) conceptualization of the sick role is not applicable to the experiences of women who have suffered an MI. Indeed, one must question if Parsons' work is applicable to women at all. Roles are defined, created, and modified as a consequence of interaction between self and others (Wu, 1973). Women hold strong beliefs regarding the necessity of their caring role. This factor, coupled with the beliefs of family members that wives and mothers simply do not get sick, is an obstacle to women engaging in the sick role. Indeed, there has been some suggestion that women's greater utilization of physician services and pharmaceutical products serves a palliative function and thus enables women to avoid the sick role (Litman, 1974).

The men in this study also expressed reluctance to remain in the sick role, but for different reasons. The men were primarily concerned with the loss of their bread winning roles. Feelings of uselessness and financial worries prompted these concerns. The event of an MI did not, in their minds, justify a prolonged rehabilitation. However, employer policies, in most cases, prohibited them from returning to work. One factor that contributed to the belief that a prolonged rehabilitation was unnecessary was the hidden nature of the MI. Parsons (1951) indicated that in order to maintain the sick role the patient must demonstrate his or her illness and it must be recognized by others as genuine. The fact that MI patients can appear "normal" and "healthy" can bar them from their legitimate claim to the sick role. Individuals with an essentially non-visible impairment provide no clues to alert others to their disablement. As a result, there is a tendency for others to behave toward them as if they were "normal." In turn, this denies the individual his or her claim to the sick role. The only way this claim can be restored is by informing others of the disability. This however is extremely threatening. The MI patient wants to be well, yet wants to be supported and cared for. Consequently, he or she are caught between roles.

Although conceptualizations of the sick role may in part explain the role of the acutely ill patient, it provides no understanding of how patients manage transitions into previously held roles. According to Meleis (1975), nurses must assist individuals with health-related life transitions and attendant role transitions. To date, the strains an MI patient experiences when confronting role transitions have not been addressed in the research literature. It has been postulated that anxiety is influenced by the degree of role clarity an individual experiences (Bramwell & Whall, 1986). The findings of this investigation support this notion. A further understanding of the anxiety that results from role transitions may provide valuable clues regarding the ways in which nurses can assist MI patients in minimizing the strain of role transitions.

The second strategy that is utilized by MI victims to preserve a sense of self involves their striving to achieve a balance between needs and supports. Little is known about how family or friends impede or facilitate adjustment following MI. The findings of this investigation indicate that perceptions of support have a large impact upon the MI victim and her or his condition. Most of the literature suggests that support is a positive factor. However, as the findings of this study indicate, behaviour on the part of others that may be thought of as kind or concerned does not necessarily have a beneficial or benign influence on the MI patient's adaptive behaviour. This finding is supported in part by the work of Garrity (1973b) who considered the role of social support in vocational adjustment post-MI. Garrity found that as the amount of worry expressed by the family increased the number of hours worked by the MI victim decreased. Hyman's (1971) description of how disability increases in the presence of overprotective or preferential treatment adds further support to this finding. Hyman hypothesized that preferential treatment modifies self-conceptions to include the concept of the self as sick. Indeed, the informants in this investigation tended to internalize the expectations of others, and in some cases this inhibited their ability to return to previously held social roles.

An MI patient is most likely to achieve a balance between needs and supports when reciprocity exists between him or herself and others. To continue to receive support and be unable to reciprocate devalues the patient's sense of self-worth. This finding is congruent with the tenets of social exchange theory. Blau (1964) defined social exchange as "the voluntary actions of individuals that are motivated by the returns they are expected to bring and typically do in fact bring from others" (p. 91). Gouldner (1960) proposed that the process of exchange is governed by the norm of reciprocity which specifies that a return must be given for benefits received. In situations where the individual is unable to reciprocate, an imbalance or "debt" exists. As Hyde (1983) indicated, individuals remain indentured to the gift and this servitude can only be ended by an act of gratitude. Hence, if the MI patient feels unable to reciprocate acts of support and kindness, she or he will continue to feel indebted to others. This imbalance, in turn, devalues one's ability to fully engage in social relationships.

The assumption that the effects of social support are always positive must be questioned. Clearly, more research attention needs to be directed toward the process through which support operates, the conditions under which it is or is not present, and the situations in which it has either positive or negative effects. Social exchange theory may provide an appropriate framework for guiding an investigation of this nature.

The second phase in the stage of learning to live involves a process of minimizing the uncertainty the MI patient experiences. Mishel (1981, 1984) defined uncertainty as a cognitive state created when an event cannot be adequately structured or categorized because sufficient cues are lacking. This definition is congruent with the findings of this study. Informants experienced uncertainty when they were unsure of their abilities and when they lacked a structure with which to make judgements regarding their lives.

Uncertainty has been proposed as a major factor influencing patient responses to MI (Christman et al., 1988; Krantz, 1980). There is extensive documentation concerning the negative emotions that follow MI (Doerhman, 1977). Reported findings indicate that problems in psycho-social adjustment may negatively affect long term survival (Garrity & Klien, 1975; Stern, Pascale, & Ackerman, 1977). However, the strategies that individuals utilize to manage uncertainty post-MI have not been documented. In this study it was found that individuals who have experienced an MI utilized four strategies in their attempts to minimize uncertainty: gauging progress, seeking reassurance, learning about the heart, and practicing cautiousness.

Perceptions of uncertainty were minimized when informants were able to find evidence of improvement. The strategy of gauging progress was implemented in order to monitor improvements. This strategy included the setting and monitoring of goals, reviews of progress, and making comparisons of progress with others. If an informant was unable to generate positive evaluations utilizing this strategy its utilization was discontinued. Although not previously documented in the literature in terms of the MI patient's experience, the gauging of progress is comparable to Taylor's (1983) finding that individuals with life threatening conditions employ a number of strategies to enhance the self and restore self-esteem. Taylor described how women with cancer compared their progress with others who were not coping or progressing in order to enhance their self-esteem. Similarly, the MI victim engages in the strategy of gauging progress in order to enhance self-evaluations.

One goal of nursing is to enhance the coping strategies that individuals utilize. The ability of the MI patient to minimize uncertainty through the utilization of specific strategies warrants further investigation. Through research of this nature nurses can gain a further understanding of the utility of these strategies and the ways in which they can be enhanced.

The strategy of seeking reassurance is another finding that has potential implications for nursing research and practice. The MI victim is unable to completely trust his or her abilities and so looks to the health care professional for support. The MI patient's struggle to re-establish a sense of control can be greatly diminished by the disconfirmation of her or his expectations. As the cues given by health care professionals are subject to the MI patient's unique perception, casual remarks and subtle behaviours can be interpreted by the patient to mean that she or he is not progressing well. A resulting incongruency with the patient's expectations can be devastating. Although Taylor (1983) described the disconfirmation experienced by cancer patients as a temporary frustration, the findings of this study indicate that the result of disconfirmation can have serious implications. These findings support Good's (1979) and Klienman's (1980) suggestions that it is an essential task of the health care professional to clarify the meaning behind presented problems and to monitor the ways in which patients assimilate the information they have been given.

As indicated in the review of the literature, the psychological adjustment of the MI patient has been the subject of numerous investigations. Despite this fact, the role that health care professionals play in increasing the stress and anxiety patients experience following MI has been largely ignored. The hospital environment has long been recognized as a source of stress for the acutely ill patient, particularly in this era of ever increasing technology. Yet, the power and control of health professionals have been ignored as sources of patient distress. The findings of this study suggest that the power relationships that exist between health professionals and patients can be detrimental to the MI patient's adjustment. Research is beginning to demonstrate the shortcomings of a one-sided professional approach to patients (Levin & Idler, 1983). Rehabilitation models, such as that suggested by Schulte, Pluym, and Van Schendel (1986), which envisions the patient role as a partnership with the professional, may provide a means to minimize this apparent form of stress. In light of these findings, further research that pertains to the nature of the health professional/patient role as a source of stress for the patient is warranted.

The third strategy that MI victims utilize in their attempts to decrease uncertainty involves learning about the heart. The MI patient typically has little understanding of the heart prior to the onset of the MI. Learning about the heart enables the patient to understand what has happened and provides a knowledge base that can be utilized to predict outcomes. Patient education, a major component of the rehabilitation process, has become an important aspect of the care of the MI victim. Intuitively, it would seem reasonable to assume that the more information shared with patients the more their uncertainty will decrease. However, the findings of this study indicate that for some informants only certain types of information were found to be useful. Many of the informants expressed difficulties in understanding abstract concepts and medical terminology. As mentioned previously this, in turn, served to increase uncertainty.

These findings are supported by the work of Wallace and Wallace (1977). These investigators found that anxiety levels were higher among patients receiving group education than those who received none. The learning needs of cardiac patients have received a great deal of attention in the research literature. Despite attempts at replication, no consistent understanding of these needs has emerged. In examining surgical patients Andrews (1970) suggested that differences in patients' personalities may affect the manner in which information is received. He described three groups of patients: avoiders, sensitizers, and an intermediate group only. Information was found to have a beneficial effect on the intermediate group. Andrews' work suggests that information is utilized by individuals in a variety of ways. Certainly, this was true for the informants in this investigation. Perhaps the present confusion in the rehabilitation literature stems from the fact that one educational program cannot meet the needs of every MI patient. To date, this possibility has not been fully explored.

The final strategy utilized by the MI patient to minimize uncertainty involves the practice of cautiousness. Although cautious behaviour has been alluded to in the cardiac rehabilitation literature (Byrne & Whyte, 1978; Wishnie, Hackett, & Cassem, 1971) it has generally been described as a maladaptive response which is indicative of anxiety. In this investigation it was found that informants practiced cautiousness in order to manage the uncertainties of day to day life. This strategy enabled the informants to maintain a sense of control. As it contributed to a sense of control, the utilization of this strategy can be viewed as an adaptive response.

The practice of cautiousness in some cases was reinforced by the edicts of the health professionals. Instructions such as "don't overdo it" and "take it easy" served as reminders that the potential to harm oneself was ever present. Although in some situations a fear of over-exertion can overwhelm and "paralyze" certain individuals, it does afford others a sense of control. As this strategy is currently utilized by MI patients and reinforced by health care providers, the situations in which it can be considered an adaptive response warrant further investigation.

The third phase of learning to live involves a process of establishing guidelines for living. Three strategies are involved in this process including: testing one's limitations, learning to read one's body, and finally, modifying one's life-style. All of these strategies are directed towards the re-establishment of con[illegible]l. Whereas the strategy of practicing cautiousness affords the MI victim a sense of cognitive control, specifically predictability, the strategy of testing limitations is utilized in order to re-establish a sense of physical control (independence). As such, this strategy typically follows the strategies that are utilized to minimize uncertainty.

Although the fears that MI patients experience have been documented in the literature (Crawshaw, 1974; Davidson, 1979; Gentry & Haney, 1975; Runions, 1985), the strategies that patients utilize in their attempts to re-establish a sense of control have been largely ignored. In this study it was found that the strategy of testing limitations was a necessary aspect of the adjustment process. Although some assistance with this testing was supplied through exercise programs, the informants found that it was necessary for them to independently test their abilities in their home and work environments. In some situations the informants described situations where they pushed themselves beyond their abilities. The failure which resulted was devastating for the informants.

If the MI patient is going to engage in testing of his or her limitations it seems important to understand how this strategy can be safely supported by health care providers. Situations in which the MI victim has harmed him or herself as a result of vigorous testing have been documented in the literature (Cassem & Hackett, 1977; Ford, 1987). This strategy, like many of the others described in this investigation, has the potential to harm the MI victim if over-utilized. Nurses are in a situation to monitor the manner in which the MI victim utilizes this strategy. Careful assessment of the utilization of this strategy is a first step toward a safe adjustment process. Future research, directed toward gaining an understanding of how this strategy can be safely enhanced, may also contribute to the nursing care of the post-MI patient.

Closely related to the strategy of testing limitations is the strategy of learning to read one's body. The event of MI undermines one's trust in one's body. In the adjustment process the MI victim must become sensitized to his or her body's needs and demands. Often, this is a new skill for MI victims as they have tended to ignore their bodies' needs in the past. The ability to read one's body is developed as a result of testing limitations. The understanding developed as a result of this testing contributes to the safe testing of further limitations. For example, if the MI victim is able to confidently interpret the signs and symptoms he or she is experiencing, he or she will be able to test limitations with a greater sense of confidence. In her discussions with MI victims, Ford (1987) also found that individuals must learn to read their bodies post-MI. Ford stated, "Survival and health depend on being attentively attuned to the meaning and significance of each symptom of physical discomfort" (p. 229). In this investigation it was found that providing information about the physical symptoms of over-exertion was not a sufficient means by which to assist the MI victim to become attuned to her or his body's needs. An understanding of how to read one's body can only be fully developed and refined through experience.

Some MI victims can develop a hypersensitivity to the physical symptoms they experience. This behaviour has been termed "cardiac neurosis" (Cassem & Hackett, 1977). The factors that can precipitate this condition are not well understood. To some degree, a health care professional's focus on physical symptoms may reinforce an individual's propensity to focus on physical symptoms. This hypothesis is supported by the fact that some of the informants in this study believed their concerns were heightened, particularly regarding angina, by health care professionals' apparent emphasis on signs and symptoms. This finding again emphasizes the importance of monitoring patients' perceptions. Information which is complex in nature, may be easily misunderstood and, in turn, may precipitate a state of anxiety in the MI patient. As post-MI patients learn to read their bodies they should be encouraged to share their feelings with health care professionals. As Ford (1987) indicated, there should be an interaction of personal and professional knowing, that in turn should enhance the MI victim's capacity to adjust.

The modification of life-style is the third means by which guidelines for living are established by the MI victim. This strategy is, to a large extent, guided by the ways in which the MI victim has come to terms with the MI experience. Life-style changes are only implemented by the victim if they are believed to be of value. This finding is of extreme importance in light of the current concern regarding compliance to treatment regimens post-MI. It would seem that MI victims will not value life-style changes that do not fit into their causal understanding of their MIs. The life-style changes that health care professionals endorse will have little or no value for the victim unless the victim believes that the prescribed changes will play a role in the reduction of subsequent MIs. This relationship between values and behaviours is supported by the work of Janz and Becker (1984) who found that the state of readiness to take action was in part influenced by the perception of a health threat. For example, if the MI victim does not believe that a high cholesterol diet constitutes a threat, he or she will not make diet modifications. If, on the other hand, the MI victim believes that stress was the cause of the infarction, life-style modification will focus on stress reduction.

The issue of compliance to prescribed regimens is controversial. In the case of the MI victim there exists an apparent conflict between the compliance to regimens and the re-establishment of control. In an attempt to regain control the MI victim struggles to reclaim a sense of independence and self-confidence in her or his decision making power. Yet, the term "compliance" implies that the patient should not control decisions, but should yield to the recommendations of others. Noncompliance implies a power struggle between the patient and health care providers. It would seem that the resolution of this power struggle can only be achieved through a process of consensus in which changes are negotiated between health care professionals and the client (Dracup & Meleis, 1982). The findings of this study indicate that the MI victim's perception of her or his illness must be considered in this process of negotiation and that attempts to achieve adherence to recommendations should begin early in the adjustment process.

Hijeck (1984) proposed that the Health Belief Model, initially developed in the 1950s, may provide a useful framework for the examination of adherence behaviours in cardiac patients. An instrument was subsequently developed to assess patients' perceived susceptibility to disease, perceived severity of disease, perceived benefits and barriers to preventative care, and cues to action. Although the development of this instrument is apparently still in progress, it may provide one mechanism for assessing patients' adherence behaviours and identifying possible areas of intervention. What is lacking in Hijeck's instrument are items which relate to the patient's perceived cause of the MI. The findings of this study indicate that this is a pivotal factor in the modification of life-style. Those informants who did not believe that certain life-style changes were necessary experienced difficulties sustaining these changes over time.

It is interesting to note that the approaches used in considering and implementing life-style modifications were found to differ among male and female informants. The changes that men incorporated post-MI tended to be made in conjunction with their wives, while the changes that women incorporated were implemented independently. There has been some suggestion in the literature that women demonstrate more non-compliant behaviours than do men post-MI (Garrity, 1973b; Mayou, MacMahon et al., 1981). The fact that changes are implemented more independently by women, with little perceived support being offered, may partially account for women's lack of adherence behaviours. Although it seems fairly obvious that the support of family members may play a large role in adherence to regimens, few studies have examined this relationship (DiMatteo & Hays, 1981). Litman (1974) postulated that the wife-mother's absence from her usual duties is less tolerated by the family than the father's absence. The pressure to resume previously held roles may account for the female informant's reluctance to modify her roles in any way.

Families depend on the congruency of role relationships, therefore, any significant changes in roles may be difficult for other family members to accept and support. This seems particularly true for the roles of mothers and wives. The barriers to life-style modification which women experience post-MI warrant further investigation. Only through investigation will directions for interventions be revealed.

Living Again.

The final stage of the adjustment process is entered gradually and is characterized by three responses: an acceptance of limitations, a refocusing on other concerns and issues, and the attainment of a sense of mastery. The presence of these responses are indicative of the victim's sense that he or she has re-established a sense of control and is starting to live life to its fullest once more. Although maladjustment post-MI has been the the focus of numerous research endeavors, the hallmarks of successful rehabilitation have not been previously described. Investigators have tended to utilize indices such as return to work and mortality post-MI to measure successful readjustment (Byrne, 1982; Cay et al., 1973; Garrity, 1973b; Garrity & Klien, 1975; Nagle et al., 1971). Clearly, indices such as these are insufficient. Mortality statistics fail to account for the psycho-social difficulties MI patients might experience. The index of return to work is also lacking as individuals might choose to not return to work. In this investigation it was found that the decision to not return to work was not necessarily motivated by fear and depression but was based on a re-evaluation of life priorities. It is possible that MI victims can fully adjust post-MI and not return to work. Although incongruent with the Protestant work ethic, this decision does not exclude the possibility of full adjustment.

An acceptance of limitations is perhaps a better index of adjustment. The MI patient who is able to complete the adjustment process no longer perceives the difficulties of limitations. Limitations are incorporated into one's life to such an extent that their presence is not readily apparent to the victim or to others. The second response that is indicative of adjustment is the ability of the MI victim to refocus her or his attention on issues and concerns other than the MI. Time, physical improvement, and a desire to live all contribute to the MI victim's ability to focus on other concerns. Finally, although life will never again be the same for the MI victim, the individual who is able to successfully adjust post-MI experiences a sense of mastery. This sense of mastery involves an ability to complete tasks without consideration.

The duration of the adjustment process can extend up to two years post-MI. The size of infarction and physical disability experienced as a result of the MI appear to play only a small role in this process. This finding is supported by the work of several investigators (Davidson, 1979; Mayou, Foster et al., 1978a; Monteiro, 1973; Segev & Schlesinger, 1981).

Abandoning the Struggle

Although this investigation was not focused on the experiences of individuals who are unable to adjust post-MI, the experiences that the informants in this investigation described have some bearing on this topic. Those individuals who experienced a number of set backs in the adjustment process and developed a belief that the struggle to regain control was "hopeless" were unable to sustain efforts to re-adjust. The formulation of unrealistic goals, lack of social support or the presence of overprotective behaviour, and incongruity between self assessments of progress and professional assessments of progress all contributed to the abandonment of the adjustment process. Seligman's (1975) theory of learned helplessness supports a relationship between behaviour and outcome expectancies. If an individual learns that desired outcomes are independent of responses, the motivation to control the outcome will be reduced. Seligman found that if individuals learn they cannot control a situation, eventually their fear will decrease with time and be replaced by a sense of despondency. The parallel between Seligman's work and the findings of this investigation are clear.

Further investigations that consider the experiences of individuals who abandon the struggle to adjust post-MI are necessary. Cardiac invalidism is a very real problem which several investigators have attempted to address (Byrne, 1982; Byrne, Whyte, & Butler, 1981; Garrity & Klien, 1975; Mayou, Foster et al., 1978b). As yet, there has been no detailed investigation of these individuals' experiences utilizing a qualitative research approach. An investigation of this nature could provide a valuable adjunct to this study. The process of adjustment described in this investigation would provide an excellent starting point for such an investigation.

The Process of Adjustment

The process of adjustment that individuals experience following MI is highly variable. The MI victim's perceptions of her or his progress and abilities are subject to change over time, particularly during the second and third stages of the adjustment process. The reflexive nature of the adjustment process has not, to date, been described in the research literature. Models such as that proposed by Cassem and Hackett (1977) imply a linear progression of emotions and responses. The cyclical nature of the MI victim's perceptions and responses may in part account for the extreme variability of emotional responses described in the literature.

Many parallels can be drawn between the model developed in this study and the model of family adaptation proposed by McCubbin and Patterson (1983) entitled the Double ABCX Model of Adjustment and Adaptation. McCubbin and Patterson suggested that families may need to return to an earlier phase of adjustment several times in order to achieve adaptation following a crisis. Hence, the cyclical nature of problem solving that is an inherent aspect of the adjustment process described in this study is strongly supported by this model. The Double ABCX Model focuses on the relationship between three factors: the accumulation of stressors and demands experienced by the family, the meaning the family attributes to the crisis situation, and the family's ability to access and utilize resources. Clearly, these three factors are important throughout the adjustment process that an individual experiences following MI. The event of an MI constitutes a crisis that affects the individual as well as his or her family. Further research that focuses on the adjustment of the entire family following MI is certainly needed before a complete understanding of the adjustment process can be developed. Considering the striking parallels between the model developed in this investigation and the work of McCubbin and Patterson, the Double ABCX Model may provide an appropriate framework for an investigation of this nature. Only through further investigation of the adjustment process will a complete understanding of the experiences of the MI victim be attained.

Propositional Statements

Further research is required in order to gain a complete understanding of the adjustment process post-MI. However, a number of propositional statements can be derived from this investigation. Ten such statements are listed below. It is hoped that the findings of this study will provide a sound basis for future research.

The propositional statements identified as a result of this study were:

1. Until a sense of personal control is regained an individual is unable to fully adjust following MI .
2. The greater extent to which individuals normalize their symptoms the longer the delay in arrival at the hospital following the onset of symptoms.
3. The more MI victims believe their condition is a direct result of their behaviour the greater the sense of guilt they experience.
4. As the amount of guilt experienced by an MI victim increases the amount of stress experienced increases.
5. A fear of death and permanent disability, an inability to identify the cause of the MI, and a sense of uncertainty regarding the future have a negative impact upon the adjustment process post-MI.

6. If the behaviours of others indicate to the MI victim that he or she is incapable, then feelings of helplessness are experienced.
7. Because they are unable to maintain the sick role women resume activities at a greater speed than men post-MI .
8. Women are more reluctant to engage in life-style modifications post-MI as they fear that these changes may negatively affect their mothering and spousal roles.
9. A perception of incongruity between one's own assessment of progress and the health professionals' assessment of progress increases a sense of uncertainty, which in turn has a negative impact on the process of adjustment.
10. The learning needs of cardiac patients are contingent on their ability to process information and incorporate it into their lives.

Discussion of Research Method

In order to meet the objectives of this study a grounded theory approach was utilized, as it provided a rigorous means by which the MI victim's perspective could be elicited and analyzed. Use of this method resulted in the identification of a core variable that describes most of the social-psychological variation in the experiences of individuals who were adjusting post-MI. Further analysis of the process of adjustment resulted in a structural framework for the emerging theory. The purpose of this section is to discuss the limitations of the findings.

Generalizability of the findings was not the goal of this study. As the sample size was limited, no attempt was made to measure any of the characteristics described. A study of this nature does, however, permit theoretical generalizability. An investigation can demonstrate theoretical generalizability when aspects of the emergent theory can easily be applied to the experiences of other individuals. The utilization of secondary informants to verify the emergent theory was one means by which the generalizability of the findings was ensured. The resultant findings of this study do not represent the experiences of any one individual, but represent a composite understanding of the process of adjustment which the informants of this study experienced. Accordingly, the specific characteristics of the informants may limit the theoretical generalizability of this investigation. For example, individuals who were not enrolled in a cardiac rehabilitation program were not included in this investigation. Therefore, the findings of this study may not apply to those individuals who are not, for whatever reason, engaged in formal cardiac rehabilitation programs.

Glaser (1978) indicated that theoretical generalizability is present when a theory has "fit" and "grab." "Fit" refers to the fact that resultant theory is grounded in the data. A potential limitation in the utilization of the grounded theory method is the reactive effect which the researcher can impose (Chenitz & Swanson, 1986). The interview method used in this study was by nature interactive. Therefore, researcher biases could potentially have been imposed on the responses elicited. However, the utilization of theoretical sampling and the test-retest method, which is an integral part of the grounded theory approach, ensured that the potential effects of the researcher were limited. Although some informants were initially reluctant to discuss their experiences, the utilization of multiple interviews enabled a trusting relationship to be established with the investigator. Consequently, the informants were able to express their views. This was indicated by the fact that the informants did not acquiesce to the researcher's point of view, but felt free to point out the inadequacies of the emergent theory.

The other characteristic that is indicative of theoretical generalizability is "grab." Grab refers to the fact that a grounded theory speaks in a relevant, makes-sense, feels-right way when it offers a construction of the reality of the informant's experience. Having shared the findings of this study with a number of individuals (including secondary informants) the researcher has been impressed by the fact that the findings are extremely relevant.

Comments such as "it makes sense," "it's right on," "it's just like my father experienced" are indications that the findings of this study do indeed have grab.

Finally, it must be recognized that theory development is an ongoing process. Whereas in qualitative research approaches the findings are based on informants' interpretation of events, quantitative research offers an understanding of relationships in such a way that causality can be inferred (Field & Morse, 1985). Although the findings of this study are not generalizable, several propositional statements have emerged which can be subjected to hypothesis testing in future research. The characteristics of the grounded theory method lends itself to future testing of this nature.

Summary

This investigation focused on the process of adjustment that individuals experience following MI. Although numerous investigations have been conducted in the field of cardiac rehabilitation, the findings of these research endeavors offer a fragmented view of the adjustment process. Investigators have, to date, tended to examine isolated relationships between select patient responses and outcomes. Furthermore, the possibility that the experiences of men and women may differ post-MI has not been fully explored. Therefore, the grounded theory method was utilized to describe the process of adjustment in its entirety and to describe the similarities and differences that exist in men's and women's experiences post-MI.

The findings of this study indicate that the adjustment that individuals experience following MI is a variable process which incorporates four emergent stages. In each of these stages the individual focuses on regaining a sense of personal control. Informants' descriptions indicated that a sense of control consisted of three dimensions: a sense of predictability, of self-determination and of independence. The adjustment process is not completed until each of these dimensions of control are fully realized.

The first stage of the adjustment process involves attempts to defend oneself against the threat of the presenting symptoms, the diagnosis, and the hospital experience. Three strategies, including the normalizing of symptoms, a struggle to maintain the *status quo*, and a distancing of one's self are utilized in this first stage in order to maintain a sense of control. In the second stage, the individual struggles to come to terms with his or her MI. The focus of this stage is a struggle with a perceived loss of control. In order to come to terms with one's MI, the victim must face her or his mortality, make sense of the event, face potential limitations, and finally begin looking toward the future.

The second and third stages of the adjustment process were found to be highly related in that the ways in which an individual deals with the second stage affects the manner in which the third stage of the adjustment process is experienced. The focus of the third stage is learning to live again. In this stage the MI victim struggles to preserve a sense of self, minimize uncertainty, and establish guidelines for living. Numerous strategies are employed by the victim in order to re-establish a sense of control. If control is re-established the individual progresses to the final stage of adjustment. The hallmarks of this stage include an acceptance of limitations, a refocusing on issues other than the MI, and finally, a perceived sense of mastery.

Several differences were noted between the process of adjustment that men and women experienced. I was found that women tended to rule out the possibility of MI as they believed that women were not susceptible to heart disease. In turn, many women experienced difficulty making sense of their MIs as they held the belief that MI was a man's disease. Men's and women's experiences with the process of adjustment post-MI were also found to differ in the areas pertaining to the management of role transitions and life-style modifications. Of particular importance are the findings that women tend to resume full activities at a faster pace than men and are more reluctant than men to engage in life-style modifications. Men, it was found, were generally able to make life-style modifications in conjunction with their wives, while the women in this study tended to be reluctant to engae in life style changes that would disrupt their families. Further research is required in order to gain a complete understanding of the adjustment process post-MI. However, a number of propositional statements have been derived from this investigation. It is hoped that the findings of this study will provide a sound basis for future research.

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APPENDIX

INFORMED CONSENT FORM

Project Title: The Process of Recovery Following Myocardial Infarction

Investigator: Joy Johnson, RN, BScN — Telephone: 432-8233
Master of Nursing Candidate
University of Alberta

Thesis Supervisors: Dr. J. Morse — Telephone: 432-6240
Dr. S. Levine — Telephone: 432-6389

The following aspects of this research study have been explained to me to my satisfaction:

1) The purpose of this research project is to examine the process of recovery men and women experience following heart attack.
2) A maximum of three interviews will be conducted with me.
3) Each interview will last approximately 60 minutes.
4) Each interview will be audio-recorded by the investigator and transcribed by a typist.
5) A summary of the research report will be made available to me at my request.

I understand that there may be no direct benefits to me for participating in this study, but that it is hoped that the knowledge gained in this study will help improve nursing practice.

I hereby give permission to be interviewed and for the interviews to be audio-recorded and transcribed. I understand that the tapes and transcriptions will be identified only by code numbers, that my name and address will be kept in a separate locked file, and that this file will be destroyed upon the completion of this investigation. I understand that any identifying information on the transcriptions will be deleted and that the audio-recordings will be destroyed after five years time. I give consent for subsequent analysis of the transcribed interviews. I understand that any subsequent projects that utilize the transcriptions will be reviewed by the appropriate committees. I understand that I am free to refuse to participate in this study, to refuse to answer any questions, and to withdraw from the study at any time, without consequences to myself, my medical, or nursing care.

I have had the opportunity to ask questions and these questions have been answered to my satisfaction.

This is to certify that I______________________________, hereby agree to participate as a volunteer in the above named project.

____________________ Participant

____________________ Investigator

__________ Date